References

1. Hellund, E. J.: The Plasma State. New York: Reinhold 1961.
2. Giannini, G. M.: The Plasma Jet. Sci. Amer., **107** (2) 80—88 (1957).
3. Dennis, P. R., C. R. Smith, D. W. Gates, and J. B. Bond: Plasma Jet Technology. NASA SP-5033, National Aeronautics and Space Administration, 1965.
4. Thorpe, M. L.: The Plasma Jet and Its Uses. Res./Develop., **11** (1) 5 (1960).
5. Smith, D. M.: Plasma Spraying of Refractory Materials. Gen. Motors Eng. J., 2nd quarter, 1963.
6. Smith, H. E.: Development and Investigation of an Arc-Plasma Material Evaluation Facility. Wright-Patterson A.F.B., ASD-TDR-62, U.S. Air Force, 1962.
7. Pask, J. A.: Ceramic Processing, NAS, No. 1576. National Academy of Science, 1968.
8. Brown, S. D., *et al.*: Critical Evaluation of Ceramic Processing at Subconventional Temperatures. Wright-Patterson A.F.B., AFML-TR-67-194, U.S. Air Force 1967.
9. Ingham, H. S., and A. P. Shepard: Flame Spray Handbook, **I**, Metallizing Handbook — Wire Process, **II**, Powder Process, **III**, Plasma Flame Process, Westbury, Long Island: Metallizing Engineering Co., Inc., 1965.
10. Brophy, J. H., H. W. Hayden, K. G. Kreider, and J. Wulff: Activated Sintering of Pressed Tungsten Powders and Plasma Jet Sprayed Tungsten Deposits. Bureau of Naval Weapons Contract NOas 61-0326 O C, U.S. Navy, 1961.
11. Anonymous: Shop Notes for Material Spray Application with Plasmadyne S Series Hand Spray Guns. Santa Ana, Calif., Plasmadyne Corp. (No Date).
12. Leeds, D. H.: Interface Bonding Studies and a New Plasma-Arc Spray Gun, Accomplishment and Plans. Summary of the Fifth Refractory Composites Working Group Meeting, Hjelm, L. N., Wright-Patterson A.F.B., ASD-RDR-63-96, U.S. Air Force, 1961.
13. Johnson, R. H., and W. H. Wheildon: Faster Plasma Coating. Mater. Design Eng., **56** (6) 16—17 (1962).
14. Wheildon, W. M.: The Role of Flame-Sprayed Ceramic Coatings as Materials for Space Technology and the Systems for Applications. Presented at the American Institute of Chemical Engineering Meeting, March, 1963.
15. Levinstein, M. A., A. Eisenlohr, and B. E. Kramer: Properties of Plasma Sprayed Materials. Welding Res. Supplement, **1**, 8 S—13 S (1961).
16. Levy, M.: Trip Report to the III International Metallization Conference. Madrid, Spain. Watertown Arsenal Laboratories, U.S. Army (1962).
17. Mash, D. R., N. E. Ware, and D. L. Walker: Process Variables in Plasma-Jet Spraying. J. Metals, **13**, (7) 473—478 (1961).
18. Grisaffe, S. J., and W. A. Spitzig: Preliminary Investigation of Particle-Substrate Bonding of Plasma Sprayed Materials. NASA TN-D-1705, National Aeronautics and Space Administration, 1963.
19. Levinstein, M. A.: Plasma Spraying-State of the Art. AF 33 (616) 6376 Task 7381 U.S. Air Force, 1961.
20. Marynowski, C. W., F. A. Halden, and E. P. Farley: Variables in Plasma Spraying. Electrochem. Tech., **3** (3—4) 105—115 (1965).

21. Engelke, J. L.: Heat Transfer to Particles in the Plasma Flame. Presented at the American Institute of Chemical Engineers' meeting Los Angeles, California, January, 1962.
22. Hecht, N. L.: Plasma Sprayed Ceramic-Metal Composite Coatings. Presented at the 68th Annual Meeting of the American Ceramic Society, May, 1966.
23. Wurst, J. C., J. A. Cherry, D. A. Gerdeman, and N. L. Hecht: The Evaluation of Materials Systems for High Temperature Aerospace Applications. Wright-Patterson A.F.B., AFML-TR-65-339 Part I, U.S. Air Force, 1966.
24. Smith, G. D.: Heat Transfer Characteristics of Materials in Plasma Flames. Presented at the Fourth Refractory Composites Working Group Meeting, November, 1960, preprint.
25. Plunkett, J. D.: NASA Contribution to the Technology of Inorganic Coatings. NASA SP-5014 Technology Survey, National Aeronautics and Space Administration, 1964.
26. Moore, D. G., *et al.*: Studies of the Particle-Impact Process for Applying Ceramic and Cement Coating. ARL-59, AD 266381, U.S. Air Force, 1961.
27. Thompson, V. S., and O. J. Whittemore: Structural Changes on Reheating Plasma-Sprayed Alumina. Amer. Ceram. Soc. Bull., **47** (7) 261—289 (1968).
28. Bliton, J. L., and H. L. Rechter: The Design of a Flame-Spray Coating. Solid Bodies Society of Aerospace Materials and Process Engineers, North Hollywood, Calif., Western Periodicals Company, 1961.
29. Matting, M. A., and H. D. Steffens: Haftung und Schichtaufbau beim Lichtbogen und Flammspritzen. Metal, **17** (6) 583—593, (9) 905—922 and (12) 1212—1227 (1963).
30. Bliton, J. L., and H. L. Rechter: Determination of Physical Properties of Flame-Sprayed Ceramic Coatings. Amer. Ceram. Soc. Bull., **40** (11) 683—688 (1961).
31. Huffadine, J. B., and A. G. Thomas: Flame Spraying as a Method of Fabricating Dense Bodies of Alumina. Powder Met., **7** (14) 290—299 (1964).
32. Leeds, D. H.: Materials and Structure Program. Aerospace Corp., Report No. TDR-930, DCAS TDR-62-47, U.S. Air Force, 1962.
33. Strauss, I.: Final Report on Development of Composite Rocket Nozzles. Special Projects Office TR 61-109. 8, NOw 61-0479-C, U.S. Navy (1961).
34. Laszlo, T. S.: Mechanical Adherence of Flame-Sprayed Coatings. Amer. Ceram. Soc. Bull., **40** (12) 751—755 (1961).
35. Grisaffe, S. J.: Analysis of Shear Bond Strength of Plasma Sprayed Alumina Coatings on Stainless Steel. NASA-TN-D-3113, National Aeronautics and Space Administration, 1965.
36. Newcomer, R.: Precoats for Adhesion of Sprayed Aluminium Coatings. McDonnell Aircraft Corp. Report A 241—AF 33 (657)-11215, U.S. Air Force, 1963.
37. Bliton, J. L.: Plasma-Sprayed Oxide and Vapor-Deposited Nitride Coatings on Tungsten as a Means of Achieving Oxidation Protection. Summary of the Seventh Refractory Composites Working Group Meeting, I, Hjelm, L. N., D. R., James, Wright-Patterson A.F.B., RTD-TDR 63-4131, U.S. Air Force, 203—208, 1963.
38. Spitzig, W. A., and S. F. Grisaffe: Metallurgical Bonding of Plasma-Sprayed Tungsten and a Stainless Steel Substrate. NASA TN-D-2461, National Aeronautics and Space Administration, 1964.
39. Longo, F. N.: Metallurgy of Flame Sprayed Nickel Aluminide Coatings. Welding Res. Supplement, **2**, 66 S—69 S (1966).
40. Alsop, R. T., *et al.*: The Adhesion of Sprayed Molybdenum. Metallurgia, **63** (4) 125—131 (1961).
41. Howink, R., and G. Salomon: Adhesion and Adhesives, **I**, Amsterdam: Elsevier Publishers, 1965.

42. Spitzig, W. A., and S. J. Grisaffe: Metallurgical Bonding of Plasma-Sprayed Tungsten on a Hot Molybdenum Substrate. NASA TN-D-2510, National Aeronautics and Space Administration, 1964.
43. Meyer,H., and A. Dietzel: Das Flammspritzen von keramischen Überzügen. Ber. Deut. Keram. Ges. **37**., (4) 136—141 (1960).
44. Bliton, J. L., and R. Havell: Physical Properties of Flame-Sprayed Ceramic Coatings Part II $BaTiO_3$. Amer. Ceram. Soc. Bull., **41** (11) 762—767 (1962).
45. Roller, D.: Summary of the Second High Temperature Inorganic Refractory Coating Working Group Meeting. Wright-Patterson A.F.B., WADC TR-59-415-915, U.S. Air Force, 1959.
46. Bliton, J. L., Y. Harada, and Richter: Flame Sprayed Zirconia Films for Fuel Cell Components. Amer. Ceram. Soc. Bull., **42** (1) 6—9 (1963).
47. Brophy, J. H., H. R. Herdeklang, K. G. Kreider, and J. Wulff: Activated Sintering of Pressed Tungsten Powders and Plasma Jet Sprayed Tungsten Deposits. Bureau of Naval Weapons, Contract NOas 59-6264c, U.S. Navy, 1960.
48. Landingham, R. L., *et al.*: Plasma-Jet Coatings of Tungsten on Steel. AD 625800, University of Arizona, 1962.
49. Eisenlohr, A.: Arc Plasma Sprayed Tungsten as an Engineering Materials. Summary of the Seventh Refractory Composites Working Group Meeting **III**, Hjelm, L. N., D. R. James. Wright-Patterson A.F.B., RTD-TDR 63-4131, U.S. Air Force, 1963.
50. Halkias, J. E., H. R. Thornton, and J. E. Burroughs: Plasma Arc Deposition for Aerospace Applications. Plating, **52** (1), 44—54 (1965).
51. Wheildon, W. M.: Flame Sprayed Ceramic Coating Survey and State of the Art. Presented at the 69th Annual Meeting of the American Society for Testing Materials, 1966.
52. Ingham, H. S., and A. P. Shepard: Evaluation Methods and Equipment for Flame-Sprayed Coatings. Research Laboratory Report #106, Westbury, Long Island: Metco, Inc., 1963.
53. Hjelm, L. N.: Minutes of Flame-Spray Groups. Internal Report ASTM C-22, 1966.
54. Polena, M.: Flame Sprayed Ceramic Coating Techniques. Thiokol Reaction Motors Division Report RMD-9368 F, Denville N. J., 1964.
55. Huminik, J.: High-Temperature Inorganic Coatings. New York: Reinhold, 1963.
56. Pirogov, Y. S., R. M. Brown, and A. L. Friedberg: Electrical Properties of Al_2O_3-Nickel Metal Multilayer Flame-Sprayed Coatings. Amer. Ceram. Soc. Bull., **45** (12) 1071—1074 (1966).
57. Galli, J. R., G. I. Wheeler, G. H. Clampitt, D. E. German, and R. B. Johnson: Development and Evaluation of Rocket Blast and Rain Erosion Resistant Composite Coatings Produced by Flame Spraying Techniques. Wright-Patterson A.F.B., WADC TR 58-493, U.S. Air Force, 1959.
58. Liebert, C. H.: Spectral Emittance of Aluminium Oxide and Zinc Oxide on Opaque Substrates. NASA TN D-3115, National Aeronautics and Space Administration, 1965.
59. Meyer, D. H.: Über das Flammspritzen von Aluminiumoxyd. Werkstoffe und Korrosion, **11** (10) 601—616 (1960).
60. Grenis, A. F., and A. P. Levitt: Infrared Radiation of Solid Refractory Materials. Amer. Ceram. Soc. Bull., **44** (11) 901—906 (1965).
61. Hayes, R. J., and W. H. Atkinson: Thermal Emittance of Materials for Spacecraft Radiator Coatings. Amer. Ceram. Soc. Bull., **43** (9) 616—621 (1964).
62. Unger, R.: Fourth Quarterly Progress Report. U.S. Air Force Contract AF 33 (616) 7323, Plasmakote Corp., 1961.
63. Howe, J. E., and W. C. Riley: Ceramics for Advanced Technologies. Chapter 7, New York: John Wiley and Son, 1965.

64. McCullum, D. E., and N. L. Hecht: Plasma Sprayed Coatings for Thermal Protection of Rocket Sled Components. Engineering Test Memorandum #12, University of Dayton, U.S. Air Force Contract AF 33615-1312, 1966.
65. Firth, K. E., and W. E. Lawrie: Ultrasonic Methods for Nondestructive Evaluation of Ceramic Coating. Wright-Patterson A.F.B., WADD TR-61-91 Part II, U.S. Air Force, 1962.
66. Baumanis, A. M., and W. E. Lawrie: Ultrasonic Methods for Nondestructive Evaluation of Ceramic Coating. Wright-Patterson A.F.B., WADD TR-61-91 Part III, U.S. Air Force, 1963.
67. Lawrie, W. E., and M. D. Oestreich: Nondestructive Methods for the Evaluation of Ceramic Coatings. Wright-Patterson A.F.B., WADC TR-61-91, Part IV, U.S. Air Force, 1964.
68. Haines, K. A., and B. P. Hildebrand: Interferometric Measurements on Diffuse Surfaces by Holographic Techniques. Trans. on Instr. Meas., **15**, (4) 149—161 (1966).
69. Hildebrand, B. P., and K. A. Haines: Interferometric Measurements Using the Wavefront Reconstruction Technique. Appl. Opt. **5.**, (1) 172—173 (1966).
70. Sollid, J. E.: Holographic Interferometry Applied to Measurements of Small Static Displacements of Diffusely Reflecting Surfaces. Appl. Opt., **8**, (8) 1587—1595 (1966).
71. Hecht, N. L.: Refractory Coatings Development at the University of Dayton Research Institute. Presented at the 17th Refractory Composite Working Group Meeting, June, 1970.
72. Hauser, H. H. (ed.): Modern Materials, **2**, p. 63, New York: Academic Press, 1960.
73. Moore, D. G., W. D. Hayes, and A. W. Crigler: Velocity Measurements of Flame-Sprayed Aluminium Oxide Particles. Phase I # 33 (616) 58—19 Project # 88-7022, U.S. Air Force, 1959.
74. Mock, J. A.: Flame Sprayed Coatings. Mater. Design Eng., **63** (2) 89—104 (1966).
75. Fabian, R. J.: What's New in Coatings and Finishes. Mater. Design Eng., **57** (4) 109 to 116 (1963).
76. Palermo, J. R., and C. C. Polter: Plasma Spraying Present and Future. Lebanon, N. H., Thermal Dynamics Corp. (No Date).
77. Fairlie, J.: Plasma for Cutting, Welding, Coating. Welding Eng., **47** (11) 41—44 (1962).
78. Moss, A. R., and W. J. Young: The Role of Arc-Plasma in Metallurgy. Powder Met., **7** (14) 261—289 (1964).
79. Ulrick, D. T., and E. J. Smoke: Devitrified Barium Titanate Dielectrics. J. Amer. Ceram. Soc., **49** (4) 210—215 (1966).
80. Wheildon, W. M.: Properties of Thermal Sprayed Zirconate Coatings. Presented at the 13th Annual Meeting of the Refractory Composites Working Group, July, 1967.
81. McGeary, T. C., and J. M. Koffskey: Engineering Applications for Flame Plating. Metal Prog., **87** (1) 80—86 (1965).
82. Sternkopf, J., and G. Ludke: Über das Flammspritzen von Keramikschicht. Die Technik, **19** (6) 398—402 (1964).
83. Bortz, S. A.: Four Short Review Sections From Two Current Major Programs at IITRI, Summary of the Ninth Refractory Composites Working Group Meeting, L. N. Hjelm, D. James, and E. Beardsley: Wright-Patterson A.F.B., AFML-TR-64-398, U.S. Air Force, 825—861, 1965.
84. Merry, J. D., and C. H. Vondrocek: Three Uses of Flame-Sprayed Al_2O_3. Mater. Design Eng., **57** (2) 72 (1963).
85. Shepard, A. P.: Sealer Extends Rust-Free Life for Metallized Structures. Iron Age, **191** (15) 69—71 (1963).
86. Anonymous: Mounting Sensing Elements with Rokide Ceramic Coatings. Worcester, Mass.: Norton Co., 1963.

87. Ault, N. N., and L. H. Milligan: Alumina Radomes by Flame-Spray Process. Amer. Ceram. Soc. Bull., **38** (11) 661—664 (1959).
88. Allen, A. C.: Plasma-Jet A New Tool for Ceramics. Ceram. Ind., **82** (4) 112—114 (1964).
89. Anonymous: Spray Coatings. Welding Eng., **50** (7) 37—46 (1965).
90. Otte, H. M., and S. R. Looke: Material Science Research **2**, New York: Plenum Press, 1965.
91. Anonymous: Protective Coatings for Refractory Metals in Rocket Engines. Contract No. NAS 7—113, Summary Report, National Aeronautics and Space Administration, 1963.
92. Levy, M.: Refractory Coating Research and Development, Watertown Arsenal Laboratories. Summary of the Fifth Refractory Composites Working Group Meeting, Hjelm, L. N. Wright-Patterson A.F.B., ASD-TDR-63-96, U.S. Air Force, 1961.
93. Bliton, J. L., and S. W. Bradstreet: Pertinent Activities in Refractory Composites. Ibid.
94. Vasilov, T., and G. Harris: Impervious Flame-Sprayed Ceramic Coatings. Amer. Ceram. Soc. Bull., **41** (1) 14—17 (1962).
95. Bliton, J. L., and S. A. Bortz: Ceramic Coatings for Cementitious and Metallic Surfaces. IITRI-B8009-7, Illinois Institute of Technology (1964).
96. Pasterick, N. R., and G. W. Fisher: Plasma Metallizing a Compressor Case. Amer. Machinist/Metalwork Manufac., **107**, (22) 87 (1963).
97. Roller, D.: Summary of the First High Temperature Inorganic Refractory Coating Meeting. Wright-Patterson A.F.B., WCLT-TM-58-139, U.S. Air Force, 1958.
98. Bortz, S. A.: A Review of Current Refractory Composite Research in Coatings Meeting. Ibid.
99. Knanishu, J.: Galvanic Protection by Metal Spray Method. Report #63 1491 Rock Island Arsenal, U.S. Army, 1963.
100. Anonymous: Flame Spraying Multiplies Life of Worn Parts for Brick Making Machine. Westbury, Long Island, Metallizing Engineering Co. Inc. (No Date).
101. Levy, M.: Refractory Coating Research and Development at U.S. Materials Research Agency. Summary of the Seventh Refractory Composites Working Group Meeting, **II**, Hjelm, L. N., and L. N. James. Wright-Patterson A.F.B., RTD-TDR-63-4131, U.S. Air Force (450—467) (1963).
102. Herron, R. H.: Research at Bendix Aviation Corp. Summary of Second High-Temperature Inorganic Refractory Coatings Working Group Meeting, Roller, D., WADC TR-59-415, U.S. Air Force, 41—43, 1959.
103. Stetson, A. R.: Tungsten Wire Reinforced Plasma-Arc Sprayed Tungsten. Summary of the Sixth Refractory Composites Working Group Meeting, ASD TDR-63-610 **I**, Hjelm, L. N., U.S. Air Force, 187—197, 1962.
104. Dorsey, J. J.: Development and Evaluation Services on Ceramic Materials and Wall Composites for High-Temperature Radome Shapes. WADC TR-57-665, U.S. Air Force, 1958.
105. Hayes, H. A.: An Investigation of the Feasibility of Forming Alloy Coatings with a Plasma Jet. Naval Weapons Report 7617 NOTS TD 2616, U.S. Navy, 1961.
106. Levy, M., and A. P. Levitt: Application of Flame-Sprayed Coatings at Watertown Arsenal. Technical Report NOWAL TR 3711/1 Watertown Arsenal, U.S. Army, 1961.
107. Levy, M., and A. P. Levitt: Flame-Sprayed Metallic and Ceramic Coatings for Army Applications. AMRAMS 64-01, Army Materials Research Agency, U.S. Army, 1964.
108. Kremith, R. D., *et al.*: Solid Lubricant Coatings Applied by the Plasma Spray Process. Amer. Ceram. Soc. Bull., **47**, (9) 813—818 (1968).
109. Kock, W. E.: Lasers and Holography, Garden City, New York: Doubleday, 1969.

110. Hoercher, H. E.: Summary of Plasma Facilities in the United States. Avco Corp., August, 1966.
111. Schwartz, M. A.: Proposed Definition of Ablation. ASTM Committee E-21, Section 3 Letter Ballot, March, 1967.
112. Katsikas, C. J., *et al.*: Ablation Handbook Entry Materials Data and Design. AFML TR-66-262, U.S. Air Force, 1966.
113. Wurst, J. C., and D. A. Gerdeman: Arc Heater Screening of Ablative Plastics. AFML TR-65-110, U.S. Air Force, 1965.
114. Schmidt, D. L., and H. S. Schwartz: Evaluation Methods for Ablative Plastics. Soc. Plastics Engr. Trans. **3**., No. 4 (1963).
115. Campbell, I. E.: High-Temperature Technology. New York: John Wiley and Sons, 1965.
116. Kingery, W. D.: Introduction to Ceramics. New York: John Wiley and Sons, 1960.
117. Buessem, W. R.: Thermal Shock Testing. J. Amer. Ceram. Soc., **38**, No. 1 (1965).
118. Hauser, H. H.: Coatings of High Temperature Materials. New York: Plenum Press, 1966.
119. Wurst, J. C., J. A. Cherry, D. A. Gerdeman, and N. L. Hecht: The High-Temperature Evaluation of Aerospace Materials. AFML-TR-66-308, U.S. Air Force, 1966.
120. Wurst, J. C.: The Development of a Standardized Screening Test for High Temperature Materials. Summary of the Sixth Refractory Composites Working Group Meeting, ASD-TR-63-610, **2**, U.S. Air Force, 1962.
121. Kamin, J. I.: Aerodynamics Simulation by High Spin Rate in an Arc-Plasma Environment. Cincinnati Testing Laboratories, July, 1964.
122. Robbins, D. L.: Thermal Erosion of Ablative Materials. ASD-TR-61-307, U.S. Air Force, 1962.
123. Wurst, J. C., and D. A. Gerdeman: Screening of Candidate Rocket Nozzle Materials. Summary of the Tenth Refractory Composites Working Group Meeting, AFML-TR-65-207, U.S. Air Force, 1965.
124. Hoercher, H. E.: Proposed Method for Measuring Plasma-Arc Gas Enthalpy by Energy Balance. ASTM Committee E-21, Section 3 Letter Ballot, February, 1967.
125. Dawes, L.: Electrical Engineering, **I.** (Chap. V) and **II.** (Chap. IV). New York: McGraw Hill Book Co., 1937.
126. Instr. Soc. Amer. Transducer Compendium, New York: Plenum Press, 1963.
127. Book of ASTM Standards: General Testing Methods; Statistical Methods; Appearance Tests; Temperature Measurement. ASTM Standards, Part 30 (1966).
128. Winovich, W.: On the Equilibrium Sonic-Flow Method for Evaluating Electric-Arc Air-Heater Performance. NASA TN D-2132, National Aeronautics and Space Administration, 1964.
129. Liepmam, H. W., and A. E. Puckett: Introduction to Aerodynamics of Compressible Fluid, New York: John Wiley and Sons, 1947.
130. Hallbach, C. R.: Pneumatic Pyrometry. The Marquardt Corp., October, 1962.
131. Grey, J., P. F. Jacobs, and M. P. Sherman: Calorimetric Probe for the Measurement of Extremely High Temperature. Rev. Sci. Instr., **33**, No. 7 (1962).
132. Grey, J.: Enthalpy Probes for Arc-Plasmas-Status Review. Presented at ASTM Committee E-21, Section 3 Meeting, April, 1966.
133. Grey, J.: Enthalpy Probes for Arc-Plasmas-Second Status Review. Presented at ASTM Committee E-21, Section 3 Meeting, May 3, 1967.
134. Hass, F. C.: An Evaporating Film Calorimetric Enthalpy Probe. ARL 63-47, U.S. Air Force, 1963.
135. Vassallo, F. A.: Miniature Enthalpy Probes for High-Temperature Gas Streams. ARL 66-011, U.S. Air Force, 1966.

136. Grey, J.: Thermodynamic Methods of High-Temperature Measurements. Instr. Soc. Amer. Trans., **4**, No. 2, 1965.
137. Lees, L.: Laminar Heat Transfer Over Blunt-Nosed Bodies at Hypersonic Flight Speeds. Jet Propulsion, **26**, No. 14 (1956).
138. Fay, J. A., and F. R. Riddell: Theory of Stagnation Point Heat Transfer in Dissociated Air. J. Aeron. Sci., **25**, No. 2 (1958).
139. Goulard, R. J.: On Catalytic Recombination Rates in Hypersonic Stagnation Heat Transfer. Jet Propulsion, **28**, No. 11 (1958).
140. Scala, S. M.: Hypersonic Heat Transfer to Surfaces Having Finite Catalytic Efficiency. RM No. 4, Aerophysics Laboratory, July, 1957.
141. Sibulkin, M.: Heat Transfer Near the Forward Stagnation Point of a Body of Revolution. J. Aeron. Sci., **19**, No. 8 (1952).
142. Rosner, D. E.: Similitude Treatment of Hypersonic Stagnation Heat Transfer. Amer. Rocket Soc. J., **29**, No. 2 (1959).
143. Fay, J. A., and N. H. Kemp: Theory of Stagnation Point Heat Transfer in a Partially Ionized Diatomic Gas. Presented at IAS Annual Meeting, New York, January, 1963.
144. Rosner, D. E.: Effects of Diffusion and Chemical Reaction in Convective Heat Transfer. Amer. Rocket Soc. J., **30**, No. 1 (1960).
145. Todd, J. P.: Proposed Method for Measuring Heat Flux Using a Thermal Capacitance (Slug) Calorimeter. ASTM Committee E-21, Section 3 Letter Ballot, March, 1970.
146. Bird, R. B., W. E. Stewart, and E. N. Lightfoot: Transport Phenomena. New York: John Wiley and Sons, 1960.
147. Stempel, F. C., and D. L. Rall: Applications and Advancements in the Field of Direct Heat Transfer Measurements. Presented at ISA Conference, September, 1963.
148. Thompson, R. E.: Proposed Method of Measuring Heat Flux Using a Multiple Wafer Calorimeter. ASTM Committee E-21, Section 3 Letter Ballot, September, 1968.
149. Kennedy, W. S., C. A. Powers, R. A. Rindal, and K. A. Green: AFFDL 50 MW RENT Facility Calibration. First QPR, Aerotherm Corp., February, 1970.
150. Beck, J. V., and H. Hurwicz: Effect of Thermocouple Cavity on Heat Sink Temperature. J. Heat Transfer, February, 1960.
151. Sherman, F. S., and L. Talbot: Diagnostic Studies of Low-Density Arc-Heated Wind Tunnel Stream. University of California (No Date).
152. Stem, M. O., and E. N. Dacus: Piezoelectric Probe for Plasma Research. Rev. Sci. Inst., **32**, No. 2 (1961).
153. Li, Y. T.: Dynamic Pressure Measuring Systems for Jet Propulsion Research. J. Amer. Rocket Soc., **23**, No. 3 (1953).
154. The Vidya Staff.: A Survey of Plasma Diagnostic Techniques. ARL 64-80, U.S. Air Force, 1964.
155. Chen, C. J.: Velocity Survey in Arc-Jet Tunnel Using Micron Size Tracer Particles. Santa Ana, Calif.: Plasmadyne Corp. (No Date).
156. McNally, J. R., Jr.: Role of Spectroscopy in Thermonuclear Research. J. Opt. Soc. Amer., **49** (1959).
157. Hurlbut, F. C.: An Electron Beam Density Probe for Measurements in Rarified Gas Flows. WADC TR-47-644, U.S. Air Force 1958.
158. Winkler, W.: Interferometry in Physical Measurements in Gas Dynamics and Combustion. Princeton, New Jersey: Princeton University Press, 1954.
159. Ragent, B., and C. Noble: X-ray Densitometer. Report No. 71, VIDYA, April, 1962.
160. Alpher, R. A., and D. R. White: Optical Refractivity of High Temperature Gases, **I.** Effects Resulting from Dissociation of Diatomic Gases. Phys. Fluids, **2**, No. 2 (1959).
161. Rosner, D. E.: The Theory of Differential Catalytic Probes. Arlington, Va., AFOSR TN-18, U.S. Air Force, 1960.

162. Hartunian, R. A.: Theory of a Probe for Measuring Local Atom Concentrations in Hypersonic Dissociated Flows at Low Densities. DCAS-TDR-62-101, U.S. Government, 1962.
163. Griem, R.: Plasma Spectroscopy. Fifth International Conference on Ionization Phenomena in Gases, **II**, Amsterdam: North Holland Publishing Company, 1962.
164. Fuhs, A. E.: An Instrument to Measure the Electrical Conductivity of an Arc-Plasma Jet. American Rocket Society Paper 2635-62, November, 1963.
165. Olson, R. A., and E. C. Lary: Conductivity Probe Measurements in Flames. American Rocket Society Paper 2592-62, October, 1962.
166. Shapiro, A. H.: The Dynamics and Thermodynamics of Compressible Fluid Flow, **I**, New York: The Ronald Press Company, 1958.
167. Truitt, R. W.: Hypersonic Aerodynamics, New York: The Ronald Press Company, 1959.
168. Dorrance, W. H.: Viscous Hypersonic Flow. New York: McGraw-Hill Book Company, 1962.
169. Goulard, R.: On Catalytic Recombination Rates in Hypersonic Stagnation Heat Transfer. Jet Propulsion, **28**, No. 11 (1958).
170. Grindle, S. L.: Proposed Recommended Practices for Internal Temperature Measurements in Ablative Materials. ASTM Committee E-21, Section 3 Letter Ballot, October, 1966.
171. Dow, M. B.: Comparison of Measurements of Internal Temperature in Ablation Materials by Various Thermocouple Configuration. NASA D-2165, National Aeronautics and Space Administration, 1964.
172. Sklarew, S.: The Problem of Accurately Measuring Changing Temperature of Non-Metallic Surfaces. Marquardt Corp., January, 1964.

Appendix

Bibliography of Plasma Arc Technology

A bibliography of literature dealing with flame spraying and plasma arc testing has been compiled. *Section 1* of this bibliography is an alphabetical listing of the principal references for flame spraying and *Section 2* is a compilation of the literature for plasma testing. Most U.S. government documents cited in this bibliography can be obtained by writing to: Department A, National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22151, U.S.A.

Section I

Plasma Spraying Literature

1. Allen, A. C.: Plasma-Jet A New Tool for Ceramics. Ceram. Ind., **82**, (4) 112—114 (1964).
2. Allsop, R. T., T. J. Pitt, and J. V. Hardy: The Adhesion of Sprayed Molybdenum. Met., **63**, 125—131 (1961).
3. Al'shits, I., and A. M. Ya, Koryavin: Naneseniie Plastmassovykh Pakriti Na Krupnogabaritnye Izdeliya (Application of Plastic Coatings to Large Articles). Vestn. Mashinostr. **1**, 48—51 (No Date).
4. Ammann, C., and R. E. Cleary: Testing of High Emittance Coatings. NASA-CR-1413, National Aeronautics and Space Administration, 1969.
5. Andersen, N.: Development of Plasma Sprayed Gradated Material Systems for Rocket Nozzles and Other Applications. Plasmakote Corp., Contract AF 33 (616)-7323, U.S. Air Force, 1962.

6. ANDERSEN, N.: Arc Sprayed Graded Metal-Ceramic Coatings for Critical High-Temperature Environments. Wright-Patterson Air Force Base, ASD-TDR 63-718, U.S. Air Force, 1965.
7. ANDERSON, J. E., and L. K. CASE: An Analytical Approach to Plasma Torch Chemistry. Ind. Eng. Chem. Process Design Develop., **64**, (1) 161—165 (1962).
8. ANDERSON, L. J.: Strain Gage Applications Using the Rokide Process. Dow Chemical Co., presented at the 9th meeting of IMOG Subgroup on Environmental Testing, Amarillo, Texas, 1965.
9. ANDREEV, V. V., G. V. BOBROV, and M. A. POLEZHAEV: Izgotovlenie Izdelii Iz Molibdena Metodom Plazmennogo Napyleniia (Production of Molybdenum Machine Parts by a Plasma Dusting Process). Poroshkovia Metallurgiia, **5**, (10) 38—46 (1965).
10. ANONYMOUS: Application Data Bulletins. Westbury Long Island, New York: Metco Inc. (No Date).
11. ANONYMOUS: Arc-Sprayed Gradated Coatings. Plasmakote Corp. Contract No. AF 33 (616)-7323, U.S. Air Force, 1961.
12. ANONYMOUS: Ceramics for Jet Use Put into Production. Aviation Week, Space Tech **56**, (6) 30 (1952).
13. ANONYMOUS: Ceramic Systems for Missile Structural Applications. Georgia Institute of Technology Contract No. NOW 63 0143, U.S. Navy, 1963.
14. ANONYMOUS: Ceramic Information Meeting Held at Oak Ridge National Lab. Nucl. Sci. Abstr., **11**, (11) 723 (1957).
15. ANONYMOUS: Coating Articles with Alumina By Flame-Spraying. Norton Grinding Wheel Co., Ltd. Brit., 852, 484 (1960).
16. ANONYMOUS: Critical Compilation of Ceramic Forming Methods. MT 63 12 TDR 63 4069, Institute of Engineering Research University of California (1963).
17. ANONYMOUS: De-Icing with Spraying Metal. Electroplat. Met. Spray, (4) 159 (1954).
18. ANONYMOUS: 30,000 Degrees with the Plasma Jet. J. Metals, **11**, (1) 40—42 (1959).
19. ANONYMOUS: Development of Frontal Section of a Super-Orbital, Lifting Re-Entry Vehicle. Quarterly Progress Report No. 3 Solar Aircraft Co., 1962.
20. ANONYMOUS: Development of a Ferrite Material for a High-Power Phase Shifter at S-Band. Airtron, Inc., Defense Documentation Center AD-443 657, 1964.
21. ANONYMOUS: Development of a Semiconductor Film-Type Thermocouple Energy Converter. Honeywell Research Center, Defense Documentation Center AD-258 075, 1961.
22. ANONYMOUS: Development of High Strength Materials for Solid Rocket Motors. General Electric Co., Defense Documentation Center AD-241 512, 1960.
23. ANONYMOUS: Development Program for Determination of Suitable Materials and Techniques for Fabricating Special Waveguide Assemblies. GB Electronic Corp., Defense Documentation Center AD-269 851, 1961.
24. ANONYMOUS: Detonation Gun Explodes Old Flame-Spraying Ideas. Prod. Eng., **37**, (17) 62—65 (1966).
25. ANONYMOUS: The Effect of Arc Plasma Deposition on Stability of Non-Metallic Materials. General Electric Co., Flight Propulsion Division, Contract Noas-60-6976-C, U.S. Navy, 1960.
26. ANONYMOUS: Evaluation Methods and Equipment for Flame Sprayed Coatings. Report No. 106, Long Island, New York: Metco Inc. (No Date).
27. ANONYMOUS: Fabrication of Pyrolytic Graphite Solid Rocket Nozzle Components. General Electric Co., Defense Documentation Center AD-243 906, 1960.
28. ANONYMOUS: Finishes for Metal Products. Mater. Methods Manual No. 119, September 1955.
29. ANONYMOUS: Flame Plating Process. Steel, **135**, (8) 67 (1954).

30. ANONYMOUS: Flame-Plating Applicable to Many Metals and Alloys. Amer. Metal Market, (6) 4A (1966).
31. ANONYMOUS: Flame Plating Makes Tools Last Longer. Welding Design Fabric., **35**, (12) 67 (1962).
32. ANONYMOUS: Flame Spraying Multiplies Life of Worn Parts for Block Making Machinery. Metco Report, Long Island, New York: Metco Inc. (No Date).
33. ANONYMOUS: The Effect of Plasma Spray Coatings on Fatigue Properties of H-11 Steel and 2024 Aluminum. Metallurgical Report B-714, Curtiss-Wright Corp. Wood-Ridge N.J., March, 1971.
34. ANONYMOUS: Flame Sprayed Ceramic Coating Techniques, Economic Summary. Reaction Motors Division Thiokol, Defense Documentation Center AD-464-847, 1964.
35. ANONYMOUS: High-Frequency Metal Spraying. Science and Technology Division Library of Congress, Defense Documentation Center AD-266 483 (No Date).
36. ANONYMOUS: High-Temperature Oxidation Prevented by Sprayed Aluminum. Aluminum Electroplat, (2) 74 (1953).
37. ANONYMOUS: High-Temperature Oxidation Protective Coatings for Vanadium-Base Alloys. IIT Research Institute Contract NOw 61-0806-C, U.S. Navy, 1962.
38. ANONYMOUS: High-Temperature Oxidation Protective Coatings for Vanadium-Base Alloys. IIT Research Institute, Defense Documentation Center, AD-417 137, 1963.
39. ANONYMOUS: The Importance of the Plasma Jet. Machinery, **98**, (4) 807, 858 (1961).
40. ANONYMOUS: Inorganic Dielectric Research. New Jersey Ceramic Research Station, Rutgers University, Defense Documentation Center AD-285 691, 1962.
41. ANONYMOUS: The Aerospace Manufacturing Techniques Panel of the Committee on the Development of Manufacturing Processes for Aircraft Materials. Materials Advisory Board, Defense Documentation Center AD-296 324, 1963.
42. ANONYMOUS: Report of the Ad Hoc Committee on Processing of Ceramic Materials. Materials Advisory Board, Defense Documentation Center, AD-421-422, 1963.
43. ANONYMOUS: The Metallizing Process. Welding J., **31**, (4) 291—295 (1952).
44. ANONYMOUS: Module Improvement Program. Westinghouse Electric Corp., Defense Documentation Center AD-282 505, AD-273-657, 1962.
45. ANONYMOUS: Metallized Transmission Parts Last Longer. Metco Report, Long Island, New York: Metco Inc. (No Date).
46. ANONYMOUS: Molybdenum Alloy Extrusion Development Program. Allegheny Ludlum Steel Corp., Wright-Patterson Air Force Base ASD TR 7-7850 U.S. Air Force, 1962.
47. ANONYMOUS: Mounting Sensing Elements with Rokide Ceramic Coatings. Norton Co., 1963.
48. ANONYMOUS: Metal Surfacing for Original Parts. Prod. Eng., **22**, (8) 124 (1951).
49. ANONYMOUS: Metallizing Bibliography. American Welding Society, New York, 1956.
50. ANONYMOUS: Metallizing of Plastics. Metall., **8**, (17—18) 675 (1954).
51. ANONYMOUS: Method for Measuring Bond Strength of Sprayed Metal Coatings. Metco Report, Long Island, New York: Metco Inc., 1957.
52. ANONYMOUS: New Electric Forming Methods Offer Potentials for Light Metals; Magnetic Forming and Plasma Forming. Light Metal Age, **20**, (2) 8—9 (1962).
53. ANONYMOUS: The Plasma Arc-A New Tool for Welding and Cutting. Welding Fabrication and Design, **3**, (12) 10—11 (1960).
54. ANONYMOUS: Plasma Arc Metal Spraying. Metal Ind., **101**, (1) 11—12 (1962).
55. ANONYMOUS: Plasma Arc-Multi-Capability for Economy. Welding Eng., **43**, (4) 57—58 (1958).
56. ANONYMOUS: Plasma Arc Process Coats and Forms Refractory Material. Space Aeron., **32**, (6) 105—109 (1959).
57. ANONYMOUS: Plasma Arcs Set for Full Production Role. Steel, **148**, (5) 70—72 (1961).

58. ANONYMOUS: The Plasma Arc Torch. Welding and Metal Fabric., **27**, (7) 287—290 (1959).
59. ANONYMOUS: Plasma Arc Torch Applies Unworkable Materials. Machinery, **65**, (5) 122 (1959).
60. ANONYMOUS: The Plasma-Arc Torch Finds a Wide Range of Tasks. Welding J., **39**, (3) 236—237 (1960).
61. ANONYMOUS: The Plasma Arc Torch Users in New Fabricating. Coating Methods. Iron Age, **182**, (12) 136—137 (1959).
62. ANONYMOUS: Plasma Coating; Tailored Solution for More Jobs. Steel, **156**, (21) 80—83 (1956).
63. ANONYMOUS: Plasma Flame Spraying Equipment. Eng., **213**, (6) 1093 (1962).
64. ANONYMOUS: Jet de Plasma (Plasma Jet). Le Moniteur Professional de L'Electrocite, **16**, (166) 32 (1961).
65. ANONYMOUS: Plasma Torches Cut Metals with Arc-Heated Air: Save Time and Expense. Marine Eng. Log., **67**, 103 (1962).
66. ANONYMOUS: Plasma Torch Learns to Weld. Amer. Machinist Metalworking Manu., **105**, (4) 115 (1961).
67. ANONYMOUS: La torche à plasma est Maintenance Industrielle (Present Industrial Uses of the Plasma Torch). L'Industrie Française, **10**, (113) 700—710 (1961).
68. ANONYMOUS: Present Uses, Future Hopes for Plasma E.B. Laser. Welding Eng., **49**, (1) 35 (1964).
69. ANONYMOUS: Prevention of Corrosion on Loading Rack Tee Tracks and Launching Rail Wheels, Model-Nike-Hercules. Bell Telephone Labs. Inc., Defense Documentation Center AD-244 168, 1960.
70. ANONYMOUS: Properties of Plasma Sprayed Materials. General Electric Co., Contract AF 33 (616)-6376, U.S. Air Force, 1960.
71. ANONYMOUS: Properties of Flame Sprayed Metal and Metal Oxide Coatings. Boeing Airplane Company (No Date).
72. ANONYMOUS: Protective Coatings for Iron and Steel Compared. Electroplat. Met. Spray., (5) 207, 1954.
73. ANONYMOUS: Protective Coatings for Refractory Metals in Rocket Engines. IIT Research Institute, Report No. IITRI-B 0 237-12, 1963.
74. ANONYMOUS: Report No. 2 of the Aerospace Manufacturing Techniques Panel of the Committee on the Development of Manufacturing Processes for Aircraft Materials. Iowa State University, Defense Documentation Center AD-462 323, October, 1963.
75. ANONYMOUS: Shop Notes for Material Spray Applications with Plasmadyne S-Series Hand Spray Guns. Plasmadyne Corp. (No Date).
76. ANONYMOUS: Spray Coatings. Welding Eng., **50**, (7) 37—46 (1965).
77. ANONYMOUS: Soviet Ceramics and Refractories; (Selected) Articles. Joint Publications Research Service, Defense Documentation Center—380, AD 298-830, 1962.
78. ANONYMOUS: Semi-Annual Review of Material Work in Progress. Aero-jet-General Corp., Defense Documentation Center, AD-4X12 400, 1963.
79. ANONYMOUS: Relationships Between Cavitation Erosion and Fundamental Properties of Materials. Naval Applied Science Lab., N.Y., Defense Documentation Center, AD-255 611 L, 1961.
80. ANONYMOUS: Translation in Communist China's Science and Technology, No. 301. Joint Publication for Research Service Washington, D. C., 34620, 1966.
81. ANONYMOUS: Symposium on Porcelain Enamels and Ceramic Coating on Engineering Materials. American Society for Testing Materials, 1954.
82. ANONYMOUS: Technology's Newest Baby: The Plasma Torch. Machine Moderne, **53**, (5) 9—12 (1959).

83. ANONYMOUS: Thermal Studies of 81-mm Titanium Mortar Barrel. Aberdeen Proving Ground, Defense Department Center, AD-268 996, 1961.
84. ANONYMOUS: Torch Cuts with 60,000°-F Air. Mech. Eng., **84**, (7) 66 (1962).
85. ANONYMOUS: Thermionic Double-Diode Programm. Martin Co., TDR 63 4244, November, 1963.
86. ANONYMOUS: Tungsten Carbide Flame Plating Investigation. Aerojet-General Corp., Defense Documentation Center AD-427 504, 1963.
87. ANONYMOUS: Where Coatings not Wanted, Salt Bath Removes It. Steel, **156**, (13) 126—128 (1965).
88. ANONYMOUS: Where is Plasma Arc Today? Amer. Machinist, **103**, (22) 125—127 (1959).
89. ANTOINE, R.: Mise En Œuvre Et Etude Des Jauges D'Extensométrie Fixées Par Le Procédé ROKIDE. (Use and Study of Strain-Gauges Attached by the ROKIDE Process). European Atomic Energy Community, ISPRA, Italy, 1969.
90. APPEN, A. A.: Heat Resistant Inorganic Coatings. Wright-Patterson Air Force Base, FTD-MT-24-497-68, U.S. Air Force, 1969.
91. ARENBERG, C. A.: Protective Coatings for Tantalum. Wright-Patterson Air Force Base, WADC TR-58-203, U.S. Air Force, 1958.
92. ARNOLD, H.: Das Metallspritzverfahren, seine wissenschaftlichen, technischen und wirtschaftlichen Grundlagen (Metal Spraying Technology Its Scientific, Technical and Economic Principles). Z. F. angewandte Chemie, **30**, 209—214, 218—220 (1970).
93. ASKWYTH, R. J., HAYES, and G. MIKK: The Emittance of Materials Suitable for Use as Spacecraft Radiator Coatings. American Rocket Soc., Space Power Systems Conference Paper 2538—2562, 1962.
94. AST, F.: Bestimmung der beim Metallspritzprozess auftretenden Temperaturfelder und technologische Untersuchungen an metallgespritzten Schichten (Determination of the Temperature Fields Arising from the Metal Spraying Process and Technological Investigations of Metal Sprayed Layers). Diss. T. H., Munich, 1954.
95. AULT, N. N.: Characteristics of Refractory Oxide Coatings Produced by Flame Spraying. J. Amer. Ceram. Soc., **40**, (3) 69—74 (1957).
96. AULT, N. N., and L. H. MILLIGAN: Alumina Radomes by Flame-Spray Process. Amer. Ceram. Soc. Bull., **38**, (11) 661—664 (1959).
97. AULT, N. N., and W. M. WHEILDON: Modern Flame Sprayed Ceramic Coatings. Modern Materials, **2**, ed. HAUSNER, H. H., New York: Academic Press (1960).
98. AVES, W. L.: Coatings for Re-entry. Metal Prog., **75**, (3) 90—94, 189C, 190 (1959).
99. BABBITT, R. W., and W. W. MALINOFSKY: Control and Reproducibility of Ferrites Prepared by the Flame Spray-Hot Press Technique. Army Electronics Command A 0070657, U.S. Army, 1965.
100. BACON, J. F., and R. D. VELTRI: Improved Method of Electrical Contact to Ceramics for High-Temperature Uses. Rev. Sci. Instr., **34**, 1264—1265 (1963).
101. BAKER, C., and S. J. GRISAFFE: Analysis of the Shear-Bond Strength of Alumina Coatings. NASA-TM-X-56900, National Aeronautics and Space Administration, 1965.
102. BALLARD, W. E.: The Formation of Metal-Sprayed Deposits. Proc. Phys. Soc., **57**, Part 2, (320) 67—83 (1945).
103. BALLARD, W. E.: Metal Spraying and Sprayed Metal. London, C. Griffin and Co., Ltd., 1948.
104. BARDWELL, R. A.: Flame Ceramics. Mod. Railr., (4) 1959.
105. BARLAND, E. S., S. R. ELKINS, F. L. JONES, and B. WILKINS JR.,: Arc Plasma Coatings in Refractory Metals. Refractory Metals and Alloys III, Applied Aspects, New York: Gordon and Breach Science Publishing Inc., 1966.
106. BARNETT, C. W. H.: Ultrathermic Capacitor. Wright-Patterson Air Force Base, WADD TR-61-50, U.S. Air Force, 1961.

107. Barnett, C. W. H.: 500 C Capacitors (Refractory Dielectrics). Defense Documentation Center, AD-231 309, 1959.
108. Barta, I. M.: Low Temperature Diffusion Bonding of Aluminum Alloys. Welding J. Res. Supplement, **43**, (6) 241-S—247-S (1964).
109. Barth, V. D.: Review of Recent Developments in the Technology of Tungsten. Defense Metals Information Center, 1961.
110. Barth, V. D.: Review of Recent Developments-Powder Metallurgy. Defense Metals Information Center, 1963.
111. Barth, V. D.: Review of Recent Developments, Tungsten and Tungsten-Base Alloys. Defense Metals Information Center, 1965.
112. Batchelor, L. E.: Sprayed Aluminum Reduces Compressor Clearance. Amer. Machinist, **102**, (10) 140—141 (1958).
113. Bazzarre, D., and L. J. Franklin: Improvement of Interlaminar Shear Strength in Organic Matrix Composites Utilizing Plasma Deposited Coupling Agents. Quarterly Report 2, Contract #NOOO 17-69-C 4429, U.S. Navy, 1969.
114. Belanger, J. Y., and F. Christie: The Protection of Carde Rocket Nozzles by Flame Sprayed Ceramic Coatings. Carde-TN-1684, Canadian Armament Research Development Establishment, 1965.
115. Bennett, D. G.: Suppression of Radiation of High-Temperatures by Means of Ceramic Coatings. J. Amer. Ceram. Soc., **30**, (10) 297 (1947).
116. Bennett, D. G., *et al.*: High-Temperature Resistant Ceramic Coatings, Ceramic and Metal Ceramic Bodies. AD 38003 Defense Documentation Center, 1955.
117. Berg, R. E.: Plasma Cutting Torches. Amer. Machinist, **105**, (24) 93—96 (1961).
118. Bertossa, R. C.: New Metals and Processes. Metal Treat., **9**, (6) 2—4 (1958).
119. Bitondo, D., N. Thomas, and D. Perper: Non-Stationary Surface Combustion Studies. Defense Documentation Center, AD-139 186 (No date).
120. Blampin, B.: Lubrification Par Fluorure de Calcium dans L'Air et Le Gaz Carbonique Chauds (Lubrication by Calcium Fluoride in Hot Air and Carbon Dioxide). Wear, **11**, (7) 431—459 (1968).
121. Blanchard, J. R.: Oxidation Resistant Coatings for Molybdenum. Wright-Patterson Air Force Base, WADC TR-54-492, U.S. Air Force, 1954, 1955.
122. Bliton, J. L., W. J. Christian, J. W. Dally, J. C. Hedge, and H. H. Hirschhorn: Evaluation of Thermal Protective Systems for Advanced Aerospace Vehicles. Wright-Patterson Air Force Base, ML-TDR-64-204, **1**, U.S. Air Force (1965).
123. Bliton, J. L., and R. Havell: Physical Properties of Flame-Sprayed Ceramic Coatings. Part II, Barium Titanate, Amer. Ceram. Soc. Bull., **41**, (11) 762—767 (1962).
124. Bliton, J. L., and J. J. Rausch: Plasma-Sprayed Oxide and Vapor-Deposited Nitride Coatings on Tungsten as a Means of Achieving Oxidation Protection. NASA Report No. NAS 7-113, National Aeronautics National and Space Administration, 1963.
125. Bliton, J. L., H. L. Rechter, and Y. Harada: Flame Sprayed Zirconia Films for Fuel Cell Components. Amer. Ceram. Soc. Bull., **42**, (1) 6—9 (1963).
126. Bliton, J. L., and H. L. Rechter: Determination of Physical Properties of Flame-Sprayed Ceramic Coatings. Amer. Ceram. Soc. Bull., **40**, (11) 683—688 (1961).
127. Bliton, J. L., and H. L. Rechter: The Design of a Flame-Spray Coating. Solid Bodies, Society of Aerospace Materials and Process Engineers, North Hollywood, Western Periodicals Company, 1961.
128. Bliton, J. L., and S. A. Bortz: Ceramic Coatings for Cementitious and Metallic Surfaces. Illinois Institute of Technology IITRI-B 8009-7, 1964.
129. Bloom, D. S.: Tungsten and Rocket Motors. Defense Documentation Center, AD-263 118 (No Date).

130. Blumberg, L. N., *et al.*: Electrospraying of Thin Targets. Los Alamos Scientific Lab., N 62-15631, 1962.
131. Bober, E. S., W. H. Snavely, and R. E. Stapleton: Development of High-Temperature Alkali Metal Resistant Insulated Wire. Contract AF 33657 10701, U.S. Air Force, 1964.
132. Bollinger, L. E., and R. Edse: Formation of Detonation Waves in Flowing Combustible Gaseous Mixtures and Liquid-Spray Mixtures. Ohio State University, Defense Documentation Center, AD-631, 786, 1965.
133. Bradley, E. F.: Hard Facing Upgrades Turbine Engine Components. Metal Progr., **88**, (11) 79—82 (1965).
134. Bradley, E. L., and S. D. Stoddard: An Arc Spray Powder Feeder for Ultra-Fine Particles with a Wide Range of Densities. Presented at the Pacific Coast American Ceramic Society Meeting, 1965.
135. Bradstreet, S. W.: Ceramic Coatings Present and Future. Presented at the 63rd Annual Meeting of the American Ceramic Society, 1961.
136. Bradstreet, S. W.: Flame Sprayed Catalyst Coatings. Presented at the 22nd Shop Practice Forum of the Professional Engineers Institute, 1960.
137. Bradstreet, S. W.: Flame Ceramics. Frontier, **19**, (4) 4 (1956).
138. Brandes, R. G.: Plasma Deposition. Bell Lab. Record, **43**, (4) 288—292 (1965).
139. Brinkman, R. J., ed.: Ceramic Coating Conference, 27 and 28 May, 1952. Section I, Adherence Tests, Wright-Patterson Air Force Base, WADC TR-53-37, U.S. Air Force, 1954.
140. Brophy, J. H., H. W. Hayden, K. G. Krieder, and J. Wulff: Activated Sintering of Pressed Tungsten Powders and Plasma-Jet-Sprayed Tungsten Deposits. Bureau of Naval Weapons, Access No. 12, 467, U.S. Navy, 1961.
141. Brophy, J. H., J. R. Heideklang, K. F. Krieder, and J. Wulff: Activated Sintering of Pressed Tungsten Powders and Plasma-Jet-Sprayed Tungsten Deposits. Contract NOa (s)-59-6264-c, U.S. Navy, 1959—1960.
142. Brouillette, C. V., and R. L. Alumbaugh: Cost Comparison of Protective Coatings for Steel Piling. Naval Civil Engineering Lab. TR-490, Suppl., U.S. Navy, 1967.
143. Brown, S. D.: Room-Temperature Adhesive Tests of Various Flame-Sprayed and Flame-Plated Ceramic Coating. Ordnance Corps., Prog. Rept. No. 20-374, U.S. Army, 1959.
144. Browning, J. A.: Thermal Air Cutting: Process and Economics. Welding J., **41**, (6) 458—466 (1962).
145. Browning, J. A.: Machining With a Plasma Jet. Amer. Machinist/Metalworking Manu., **106**, (6) 94—95 (1962).
146. Browning, J. A.: Plasma Flame Speeds Metalworking. Tool Eng. **44**, (4) 105—108 (1960).
147. Browning, J. A.: Plasma Arc Speeds Many Metalworking Processes. Amer. Inst. Tool Manu. Eng., **60**, Book 1, Tech. Paper 288 (No Date).
148. Browning, J. A.: Techniques for Producing Plasma Jets. Gas Dynamics Symposium, 1959.
149. Browning, J. A.: Plasma—A Substitute for the Oxy-Fuel Flame. Welding J., **38**, (6) 870 (1959).
150. Browning, M. E., H. W. Leavenworth, W. H. Webster, and F. J. Dunkerly: Deposition Forming Processes for Aerospace Structures. Wright-Patterson Air Force Base, ML TDR 64-26, 1959.
151. Brzozowski, W., M. Mikos, and J. Reda: Vnedrenie Plazmennoi Tekhniki V Khimicheskuiu I Metallurgicheskuiu Promyshlennost (Introduction of Plasma Technology into the Chemical and Metallurgical Industry). Transactions Nizkotemperaturnaia Plazma,

Mezhdunarodnyi Kongress Po Teoreticheskoi I Prikladnoi Khimii, 4720th Mezhdunarodyni Simpoziumpo Svoistvam I Primeneniiu Nizkotemperatunoi Plazmy, Moscow, USSR, July, 1965.

152. Buckley, J. D.: Thermal Conductivity and Thermal Shock Qualities of Zirconia Coatings on Thin Gage Ni-Mo-C Metal. Amer. Ceram. Soc. Bull., **49**, (6) 588—591 (1970).
153. Buffington, J. W.: Metal Spraying with Rockets. Welding J., **35**, (5) 468 (1956).
154. Buginas, S. J.: Plasma Jet Welding, Coating and Cutting; an Annotated Bibliography. Lockheed Missiles and Space Co., 1963.
155. Burke, M. H.: Future Development in Plasma Arc Welding. Aircraft Eng., **40**, (12) 13—15 (1968).
156. Burke, M. H.: Symposium on Welding in the Aerospace Industry. Society of British Aerospace Companies, 1968.
157. Burroughs, J. E., J. E. Halkias, and H. R. Thornton: Plasma Arc Deposition for Aerospace Applications. Presented at the 3rd Aerospace Finishing Symposium, American Electroplaters Society, January, 1964.
158. Burykina, A. L., and T. M. Yevtushok: Plazmennye I Diffuzionnye Pokrytiia Na Grafite (Plasma Coatings and Diffusion Coatings on Graphite). Poroshkovaia Met Nauk Ukr SSR, **5**, 39—44 (1965).
159. Butta, M.: A New Type of Cutting Torch: The Plasma-Torch. Machine, **8**, 791 (1959).
160. Cauchetier, J.: Sprayed High Melting Point Metals. Metal Ind., **93**, (18) 374—375 (1958).
161. Cauchetier, J.: Metallization by Wire Pistol with Light Alloys. Rev. Aluminum, **179**, 297 (1951).
162. Cauchetier, J.: The Adherence Obtained When Spraying Metals with Very High Melting Points. Given at the Second International Metal Spraying Symposium, Birmingham, 1958.
163. Caughey, R. A., F. M. Wilson, and R. A. Long: Alumina Radome Attachment. Defense Documentation Center, AD-271 588, 1962.
164. Chapin, E. J., and W. A. Reaves: An Investigation of Barrier Coatings on Graphite Molds for Casting Titanium. Naval Research Laboratory, NRL-6295, U.S. Navy, 1965.
165. Cherepanov, A. M.: High-Temperature Inorganic Coatings for Modern Technology. Zh. Vses. Khim. Obshchestva im. D. I. Mendeleeva, **10**, (5) 532—539 (1965).
166. Chevela, O. B., and L. M. Orlova: O Formirovanii Plazmennykh Pokrytii Na Poverkhnosti Stalei I Titanovykh Splavov (Formation of Plasma Coating on the Surface of Steels and Titanium Alloys). Poroshkvaia Met Nauk Ukr SSR, **8**, (12) 26—34 (1968).
167. Child, M. R., and A. L. Levett: Spraying Equipment for Oxide Cathodes. Defense Documentation Center, AD-442 943 L, 1962.
168. Christiansen, F.: Plasma Torch: Applied Plasma Physics. Nag-Tidsskriftet, **25**, (3) 42—44 (1961).
169. Clark, J. W., and C. H. Wodke: Plasma Arc Torch Cuts Off "Hot" Plates. Iron Age, **188**, (7) 90—91 (1961).
170. Cliff, A.: Protection of Tubular Structures from Weather by Metallizing. Metal Progr., **61**, (5) 100 (1952).
171. Close, C. G.: Metallizing for Corrosion Prevention. Proc. Eng., **23**, (7) 58 (1952).
172. Clough, P. J., and P. L. Raymond: Oxidation Resistant Coatings for Molybdenum and Other Refractory Bodies. Amer. Ceram. Soc. Bull., **40**, (5) 314—315 (1961).
173. Cooley, R. A., C. M. Henderson, R. J. Janowiecki, and M. C. Willson: A New Technique for Fabricating Thermoelectric Elements and Generators. Institute of Electrical and Electronics Engineers and American Institute of Aeronautics and Astronautics, Thermoelectric Specialists Conference, Washington, May, 1966.

174. Copeland, R. L., and V. A. Chase: Supersonic Rain Erosion Resistant Coating Materials Investigation. Wright-Patterson Air Force Base, TR-67-62, U.S. Air Force, 1967.
175. Cowen, J. M.: Adhesion and Surface Preparation in Protective Metal Spraying. Electroplat. Met. Spray., (2) 79—82 (1954), (3) 117—122 (1954).
176. Cremer, F.: Das Metallspritzverfahren (Metal Spraying Technology). Der Eisenbahningenieur, **10**, (12) 362—366 (1959).
177. Crosby, A., and P. Sykes: The Manufacture of Ceramic Radomes by the Flame Spray Process. Délégation Ministérielle Pour L'Armement, International Symposium on Electromagnetic Windows University of Paris, France, 1967.
178. Croucher, T. R.: Wear Resistance of Sprayed Metallic and Ceramic Coatings. Defense Documentation Center AD-445 190, 1963.
179. Crowley, J., Lt.: Literature Review of the Application of Sprayed Metals to Metal and Nonmetal Surfaces. Wright-Patterson Air Force Base, WCRT TM 56-115, U.S. Air Force, 1956.
180. Dallman, A. C.: Mechanical Reliability and Thermoelectrical Stability of Noble-Metal Thermocouples at 2600° F Temperature and Dose Rates up to 10 to 20 Power NVT. Wright-Patterson Air Force Base, TDR 64-7, U.S. Air Force, 1964.
181. Damon, R. A., R. L. Landingham, and D. J. Murphy: Plasma-Jet Coating of Tungsten on Steel. The Fusion Bonding of Plasma-Jet Coatings to Metals. Defense Documentation Center AD-625 800, 1962.
182. Davis, L. W.: How to Deposit Metallic and Nonmetallic Coatings with a Plasma Arc Torch. Metal Progr., **83**, (3) 105—108 (1963).
183. Davis, L. W.: How Metal Matrix Composites are Made. Amer. Soc. for Testing and Mater., No. 427, 69—90, 1967.
184. Dennis, P. R., C. R. Smith, D. W. Gates, and J. B. Bond: Plasma Jet Technology. NASA SP-5033, National Aeronautics and Space Administration, 1965.
185. Depaauh, D.: Porosity of Sprayed Coating. Parts 1—4, Electroplat. Met. Spray., (11) 435—438, (12) 475—476 (1953), (1) 36—38, (1954).
186. Dickinson, T. A.: Flame Spray Ceramics. Prod. Finish., **33**, (2) 32 (1954).
187. Dickinson, T. A.: Flame Spraying Ceramic Coatings. Prod. Finish., **41**, (3) 84 (1958).
188. Dietzel, A.: Praktische Bedeutung und Berechnung der Oberflächenspannung von Gläsern, Glasuren und Emails. Sprechsall, Keram., Glas, Email, **75**, 82—85 (1947).
189. Dittrich, F. J.: New Flame Spray Techniques for Forming Nickel Aluminide-Ceramic Systems. Amer. Ceram. Soc. Bull., **44**, (6) 492—496 (1965).
190. Dittrich, F. J.: Thermal Shock Resistance of Plasma Sprayed Zirconia Coatings. Presented at the 72nd Annual Meeting of the American Ceramics Society, 1970.
191. Doane, D.: Oxidation Resistant Coatings for Molybdenum. Wright-Patterson Air Force Base, WADC TR 54-492, Part III, U.S. Air Force, 1957.
192. Doliwa, H.: Gespritzte Metallüberzüge (Sprayed Metal Coatings). Ind.-Anz., **81**, (84) 1331—1333 (1959).
193. Donnelly, W. I.: Carbide Flame-Plating. Amer. Soc. Tool Eng., Technical Papers and Panel Discussions, **21**, (1953).
194. Donovan, M.: Experience in the Use of Plasma Spraying Techniques. Brit. Welding J., **13**, (8) 490—496 (1966).
195. Dorsey, J.: Development and Evaluation Services on Ceramic Materials and Wall Composites for High-Temperature Radome Shapes. Wright-Patterson Air Force Base, WADC TR 57-665, ASTIA # 15-965, U.S. Air Force, 1958.
196. Earle, F. M.: Metallizing Cuts Marine Maintenance Cost. Iron Age, **169**, (5) 103 (1952).
197. Eckersley, A.: H-Field Shielding Effectiveness of Flame-Sprayed and Thin Solid Aluminum and Copper Sheets. IEEE Transactions on Electromagnetic Compatibility (EMC-10) 101—104, 1968.

198. Eisenlohr, A.: Properties of Plasma-Sprayed Materials. Contract No. 33 (616)-6376, U.S. Air Force, 1960—1961.
199. Eisenlohr, A., and H. Specht: Arc Plasma Spray Gun Design for Wire Deposition. Internal G. E. Report DM 59-341, General Electric Co. (No Date).
200. Elkins, D. A., and C. H. Schaek: Possible Applications of Plasma Technology in Minerals Processing. TN 23. U 71, No. 8438, Bureau of Mines, U.S. Dept. of the Interior, 1969.
201. Elston, D. L., and G. Brodi: Plasma-Sprayed Refractory Coatings on Small-Scale Graphite Crucibles. National Lead Co. of Ohio, N 62-17516, 1962.
202. Elston, D. L.: The Plasma Spraying of Protective Coatings. Ann. Natl. Lead Co. Anal. and Phys. Testing Symp., New Jersey, 1965.
203. Engelke, J. L.: Heat Transfer to Particles in the Plasma Flame. Presented at the A.I.Ch. E. Meeting, Los Angeles, Calif., February, 1962.
204. Engelke, J. L., F. A. Halden, and E. P. Farley: Synthesis of New High-Temperature Materials. Wright-Patterson Air Force Base, WADC TR 59-654, U.S. Air Force, 1958—1959.
205. Engell, H.: Die Haftfestigkeit von Oberflächenschichten auf Metallen (The Adhesive Strength of Surface Layers on Metals). Werkstoff Korrosion, **11**, (3) 147—151 (1960).
206. Eppinger, E. D., T. A. Greening, and S. M. Jacobs: Wire Wound Plasma Spray Bonded Tungsten Solid Rocket Nozzle Insert Materials. New York, American Inst. of Aeronautics and Astronautics, 1968.
207. Eorgan, J. E., and N. D. Fern: Zirconium Diboride Coating on Tantalum. J. Metal, **19**, (9) 6—11 (1967).
208. Erickson, G. L.: Properties of Flame Sprayed Metal and Metal Oxide Coatings. Boeing Airplane Co., 1959.
209. Eschenbach, R. C., and R. J. Wickham: Metal-Ceramic Ablative Coating. Wright-Patterson Air Force Base, WADD TR 60-439, U.S. Air Force, 1959—1960.
210. Eshelman, R. H.: Plating with Carbide. Tool Eng., **36**, (1) 117—122 (1956).
211. Esty, C. C., R. W. Love, and W. M. Wheildon: High-Temperature Materials and Flame Spray Coatings for the Aerospace Industry—Their Processing, Characteristics, and Applications. Material Science Research Proceedings of the 1964 Southern Metals-Materials Conference on Advances in Aerospace Material, Vol. 2, Edited by Otte and Locke, New York: Plenum Press, 1965.
212. Esty, C. C., W. H. McMaken, and W. M. Wheildon: Corrosion Protection Via Flame Spraying. AFML 50th Anniv. Symp. on Corrosion of Military and Aerospace Equipment, Denver, U.S. Air Force, 1967.
213. Fabian, R. J.: Hard Coatings and Surfaces for Metals. Mater. Methods, Manual 134 1956.
214. Fabian, R. J.: New Coatings from the Plasma Arc. Mater. Design Eng., **54**, (6) 127—138 (1961).
215. Fabian, R. J.: Plated Cermet Coatings Fight Heat Wear. Mater. Design Eng., **56**, (3) 105 (1962).
216. Fabian, R. J.: What's New in Coatings and Finishes. Mater. Design Eng., **56**, (4) 109 to 116 (1963).
217. Fabian, R. J.: Wear Resistant Materials and Coatings. Mater. Design Eng., **56**, (6) 131—146 (1962).
218. Fairlie, J.: Plasma For Cutting, Welding, Coating. Welding Eng., **47**, (11) 41—44 (1962).
219. Farrow, R. L., and M. Levy: Analysis of a Refractory Coating System for the Thermal Protection on Titanium. Defense Documentation Center AD-421-816, 1963.
220. Finch, N. J., and J. E. Bowers: Surface Treatment of Titanium Alloys: A Review of Published Information. British Non-Ferrous Metals Research Association London, England, Defense Documentation Center AD-469 954, 1965.

221. Fischer, G. W.: Which Metal Spray Coating: Plasma or Metallizing? Machinery, **68**, (8) 83—90 (1962).
222. Fischer, G. W.: Comparison of Metal Spraying by the Plasma-Arc and Gas Flame Processes. Machinery, **101**, (12) 1423—1428 (1962).
223. Ford, R. D.: Evalation of Powder Dispensers for Use in Flame Spraying. Rubber Lab., Mare Island Naval Shipyard, Vallejo, Calif., Defense Documentation Center, AD-147 701 (No Date).
224. Fox, H. A., Jr.: Flame Spray Capability Tests for Titanium, Hastelloy, 347 Stainless Steel, and 6061 T-6 Aluminum. RN-TM-301, Aerojet General Corp., Sacramento, California, 1968.
225. Franklin, J. R.: Metallized Coatings for Heat Corrosion Protection. Corrosion Tech., **3**, (10) 326 (1956).
226. Friedman, E., R. W. Allan, and G. R. Weissman: Development of a Sprayable, Strippable, Protective Coating for Aircraft, Rockets and Missiles. Snell Inc., New York, Defense Documentation Center, AD-287 515 (No Date).
227. Fritz, J. C.: Flammspritzen von Stahl, Metallen und Kunststoffen. Essen: Verlag W. Giradet, 1955.
228. Frolov, A. S., M. G. Trofimov, and E. M. Verenkova: Gazoplamennoe Napylenie Pokrytii Iz ZrO_2 I Al_2O_3 Dobavkoi Aliumofosfata (Gas Flame Spraying of ZrO_2 and Al_2O_3 with Aluminum Phosphate Additives). Transactions Vysokotemperaturnye Pokrytiia, Seminar Po Zharostoikim Pokrytilam Leningrad, USSR, 1965.
229. Fuller, L. E.: Mating Materials in Unlubricated, High Load, Low Speed, Wear Tests at High-Temperature in Air. Soc. Automotive Eng. J., **68**, (12) 60—65 (1960).
230. Gage, R. M.: The Plasma Arc Can Now Be Used for Welding and Weld Surfacing. Welding Design Fabric., **34**, (4) 76—78, 80 (1960).
231. Gage, R. M., and J. F. Pelton: Plasma-Arc Torch: Five Years of Evolution. ASME Paper 60-WA-311 (No Date).
232. Galdon, B. F.: Special Study of a Method for Attaching Thermocouples to Mortar Tubes. Defense Documentation Center, AD-488-897 L, 1966.
233. Galleger, J.: Protection of Steelwork by Sprayed Aluminum. Electroplat Met. Spray., (1), 1954.
234. Galli, J., G. Wheeler, B. Clampitt, D. German, and R. Johnson: Development and Evaluation of Rocket Blast and Rain Erosion Resistant Composite Coatings Produced by Flame Spray Techniques. Wright-Patterson Air Force Base, WADC TR 58-493, U.S. Air Force, 1959.
235. Gaon, L., and J. L. Ciringione: Study of Effects of Metallizing Procedures on the Fatigue Strength of Crankshafts. New York Naval Shipyard, Defense Documentation Center, AD-225 238 L, 1958.
236. Garibotti, D. J.: Modular Interconnections for Micro-Assemblies-Phase II. United Aircraft Corp., Defense Documentation Center, AD-287 942, 1962.
237. Gatzek, L. E.: New Developments in Wear-Resistant Finishes and Coatings. Amer. Soc. of Mechanical Eng., Design Engineering Conference and Show, Paper 63-MD-9, 1963.
238. Georgi, H.: Möglichkeiten des Spritzschweißprozesses. (Possibilities of Spray Welding Processes). Schweißtech., **7**, (4) 130—137 (1957).
239. Gerhold, E. A.: Hard-Facing with Plasma Spray Guns. Brit. Welding J., **7**, (5) 327 to 333 (1960).
240. Gheorghiu, A.: Melting of Particle Injected into a Plasma Jet. Revu. Roumaine Physi., **14**, (4) 327—336 (1969).
241. Giannini, G. M.: The Plasma Jet and Its Application. Paper Presented at the High Intensity Arc Symposium, June, 1957.

242. GIANNINI, G. M.: The Plasma Jet. Sci. Amer., **107**, (2) 80—88 (1957).
243. GIEMZA, C. J., and W. B. HUNTER: Structural Heat Shield for Reentry and Hypersonic Lift Vehicles (High-Temperature Composite Structure). Part I, Volume I, Wright-Patterson Air Force Base, TDR 64-267, U.S. Air Force, 1965.
244. GILLIGAN, J. E., M. E. SIBERT, and T. A. GREENING: Passive Thermal Control Coatings. Lockheed Missiles and Space Co., Palo Alto, California, Defense Documentation Center, AD-602 894 (No Date).
245. GILMAN, W. S., P. W. SEABAUGH, and D. B. SULLENGER: Stable Substoichiometric Cerium Oxide Formed in an Air Plasma. Sci., **106**, (7) 1239 (1968).
246. GLADKOVSKII, V. A., and M. L. ZINSHTEIN: Mekhanicheskie Svoistva Vysokoprochnykh Materialov S Pokrytiiami, Poluchennymi Metodom Plazmennogo Napyleniia (Mechanical Properties of High-Strength Materials with Coatings Obtained by the Plasma Spray-Coating Method). Termoprochnost Materialov I Kon Strukivnykh Elementov, Kiev 1967.
247. GLAZER, F. W.: Fortschrittsber. über Cermets. Planseeber. Pulvermet., (2) 59—70 (1954).
248. GLEASON, F. R.: Miniature Thin-Film Inductors. Motorola, Inc., Defense Documentation Center AD-277 674, 1962.
249. GOETZEL, C. G., and P. LANDLER: Refractory Coatings for Tungsten. New York University, Defense Documentation Center AD-258 574, 1961.
250. GOHEEN, J. L., and R. UNGER: Arc Sprayed Gradated Coatings. Progress Reports, Contract No. AF 33 (616)-7323, U.S. Air Force, 1960—1961.
251. GORDON, G. M.: Tungsten and Rocket Motors. Stanford Research Institute, Defense Documentation Center, AD-265 023 (No Date)
252. GRAHAM, J. W., and ZIMMERMANN: Cermets in Jet Engines. Metal Progr., **73**, (4) 108 to 111 (1958).
253. GRAHAM, J. W., and W. HALL: Protective Coatings for Molybdenum Alloys. Navy Bureau of Weapons, Contract No. as 59-60260 C, U.S. Navy, 1960.
254. GRAVER, C. W., F. D. LOOMIS, and I. MOCKRIN: Crystal Growth of Fluoaluminates. Pennsalt Chemicals Corp., Defense Documentation Center, AD-278 465 (No Date).
255. GREEN, J. J., E. SCHLOMANN, A. PALADINO, and J. S. WAUGH: Fine Grain Dense Ferrites. Raytheon Co., Defense Documentation Center AD-424 668, 1963.
256. GREINER, J. W., B. E. KRAMER, and M. A. LEVINSTEIN: The Effect of Arc Plasma Deposition on the Stability of Nonmetallic Materials. Navy Bureau of Aeronautics, Noas 60-6076-C, U.S. Navy, 1960.
257. GRENIS, A. F., and A. P. LEVITT: Infrared Radiation of Solid Refractory Materials. Amer. Ceram. Soc. Bull., **44**, (11) 901—906 (1965).
258. GRIFFITH, J. S., and S. W. BRADSTREET: Solution Ceramics . . . New Fields in Coatings. Ceram. Ind., **63**, (4) 77 (1954).
259. GRIFFITHS, H.: Industrial Uses of the Plasma Arc. Brit. Welding J., **10**, (11) 546—551 (1963).
260. GRISAFFE, S. J., and W. A. SPITZIG: Metallurgical Bonding of Plasma Sprayed Tungsten on Hot Molybdenum Substrate. NASA-TN-D-2510, National Aeronautics and Space Administration, 1964.
261. GRISAFFE, S. J.: Metallurgical Bonding of Plasma Sprayed Tungsten on Hot Molybdenum Substrates. Welding J. Res. Supplement, **43**, (9) 425—427 (1964).
262. GRISAFFE, S. J., and W. A. SPITZIG: Particle-Substrate Bonding of Plasma-Sprayed Materials. NASA TN D-1705, National Aeronautics and Space Administration, 1963.
263. GRISAFFE, S. J., and W. A. SPITZIG: Observations on Metallurgical Bonding Between Plasma Tungsten and Hot Tungsten Substrates. Amer. Soc. Metals., **56**, (3) 618—628 (1963).

264. Grisaffe, S. J., and W. A. Spitzig: Analysis of Bonding Mechanism Between Plasma Sprayed Tungsten and a Stainless Steel Substrate. NASA TN-D-2461, National Aeronautics and Space Administration, 1964.
265. Grisaffe, S. J.: Simplified Guide to Thermal-Spray Coatings. Machine Design, **39**, (8) 174 (1967).
266. Hackman, R. J.: Putting Plasma Jets to Work. Tool Manu. Eng., **46**, (3) 85—89 (1961).
267. Hagar, R. L.: Electromagnetic Shielding Effectiveness Tests on Selected Materials Applied Over Metal-Plastic Interfaces. Naval Weapons Lab., Rept. NWL-TM-W-5/67, U.S. Navy, 1967.
268. Hall, F. E.: Flame-Sprayed Coatings. Prod. Eng., **36**, (25) 59—64 (1965).
269. Hall, R. W.: Protective Coating Materials. NASA 129003-05-03-22, National Aeronautics and Space Administration (No Date),
270. Hall, W. B.: Systems 400 Coating for the Protection of Columbium. Materials Information Memorandum, General Electric Co., Report No. DM-60-97 (No Date).
271. Hall, W. B., and J. O'Grady: The Development of an Auxiliary Electrode Thermionic Converter. Wright-Patterson Air Force Base, TDR-63-442, U.S. Air Force, 1963.
272. Halls, E. E.: Sprayed Zinc Coatings. Electroplat. Met. Spray., (7 & 8) 279, 316 (1954).
273. Harwood, J. J.: Protecting Molybdenum at High-Temperatures. Materials and Methods, **44**, (6) 8 (1956).
274. Hass, G. H.: The Coatings that Go On the Satellite. Mag. Magnesium., (8) 4 (1957).
275. Hassion, F. X.: Test Results, On Falex Pins Coated by the Plasma-Arc Process. Springfield Armory, Defense Documentation Center, AD-621 064, 1965.
276. Hay, W. S., and J. L. McDaniel: Densification Techniques for Refractory Metal Powder Forms. General Dynamics, Defense Documentation Center, AD-421 557, 1963, AD-432 820, 1964.
277. Hayes, R. J., and W. H. Atkinson: Thermal Emittance of Materials for Spacecraft Radiator Coatings. Amer. Ceram. Soc. Bull., **43**, (9) 616—621 (1964).
278. Hayes, G. A.: An Investigation of the Feasibility of Forming Alloy Coatings with a Plasma Jet. Naval Ordnance Test Station, Defense Documentation Center, AD-253 053, 1961.
279. Headman, M., and T. J. Roseberry: Plasma Spraying: What We Know About It. Welding Design Fabric., **36**, (4) 82—87 (1963).
280. Headman, M. L., F. L. Parkinson, and T. J. Roseberry: Process Development and Evaluation of Plasma Sprayed Beryllium. Western Gear Corp., 1964.
281. Hecht, N. L.: Plasma Sprayed Ceramic-Metal Composite Coatings. Presented at the 68th Annual Meeting of the American Ceramic Society, May, 1966.
282. Hecht, N. L., and G. A. Graves: Ceramic Coatings for Erosion Resistance. FRL-TM 30 Picatinny Arsenal, Dover, New Jersey, U.S. Army, 1962.
283. Hedger, H. J., and A. R. Hall: Preliminary Observations on the Use of the Induction-Coupled Plasma Torch for the Preparation of Spherical Powder. Powder Met., **4**, (8) 65—67 (1961).
284. Heestand, R. L., D. E. Kizer, and C. R. Ruderer: Development of a Protective Coating System for Regeneratively Cooled Thrust Chambers. NAS 3-11186, Battelle Memorial Inst., Columbus, Ohio, 1969.
285. Heil, O.: Particle Bombardment Bonding and Welding Investigation. N 130356, Heil Scientific Labs. Inc., Belmont, California, 1964.
286. Heitman, G. H.: Characterization of Plasma-Arc-Sprayed Tungsten. Polaris Propulsion Development. Aerojet-General Corp., Defense Documentation Center, AD-457 420, 1964.
287. Helfrich, W. E.: Protective Coating for Extended Life of Aircraft Jet Engines Parts. Paper 660310, Society of Automative Engineers, 1966.

288. Helgesson, C. I.: Phase Determination in Flame-Sprayed Nickel Aluminide Coating. Swedish Institute for Silicate Research, Nature, **209**, (2) 706—707 (1966).
289. Hellund, E. J.: The Plasma State. New York: Reinhold, 1961.
290. Herzig, A. J., and J. R. Blanchard: Protecting Molybdenum from Oxidation. Metal Progr., **66**, (10) 109 (1954).
291. Hessenbruch, W.: Metalle und Legierungen für hohe Temperaturen (Metals and Alloys for High Temperatures). Berlin: Springer, 1940.
292. Hessler, G.: Das Lichtbogenspritzverfahren und seine praktische Nutzanwendung (Arc Spraying Technology and its Practical Applications). Maschinenmarkt, **66**, (93) 229—232 (1960), **67**, (24) 20—24 (1961).
293. Hicks, W. T., and H. Valdsaar: Thermoelectric Properties of Selenides and Tellurides of Groups VB and VIB Metals and Their Solid Solutions. Du Pont De Nemours, Defense Documentation Center AD-419 514, 1963.
294. Hildebrand, J. F., E. W. Turns, and F. C. Nordquist: Stress Corrosion Cracking in High Strength Ferrous Alloys. General Dynamics Defense Documentation Center AD-423 387, 1963.
295. Hill, R. B.: Use of Flame Sprayed Coatings for Reduction in Initial and Subsequent Repair Costs of Gas Turbine and Components. American Society of Mechanical Engineers, Gas Turbine Conference, New York, March, 1968.
296. Hill, R. J., and E. G. Wolff: Evaluation of Fabrication Techniques for Metal Matrix Composites. J. Composite Mater., **2**, (7) 405—407 (1968).
297. Hill, V. L.: Tungsten Fabrication by Arc Spraying. J. Metals, **13**, (7) (1961).
298. Hirakis, E. C.: Coatings for the Protection of Columbium at Elevated Temperatures. Wright-Patterson Air Force Base, WADC TR 58-545, U.S. Air Force (No Date).
299. Hjelm, L. N.: Development of Improved Ceramic Coatings to Increase the Life of XLR-99 Thrust Chamber. Wright-Patterson Air Force Base, TM-62-2, ASRCE, U.S. Air Force, 1962.
300. Hoehne, K.: Possibilities of the Ultrasonic Testing of Layers of Metal Spray with Respect to Adhesion and Homogeneity. Wright-Patterson Air Force Base, FTD-TT-64-1334, U.S. Air Force, 1965.
301. Hoening, C. L., *et al.*: High-Temperature Resistant Ceramic Coatings, Ceramic and Metal Ceramic Bodies. Contract No. AF 33 (616)-2307, U.S. Air Force, 1954.
302. Holder, S. G., and A. C. Willhelm: Protective Coatings for Sheet Metals in Supersonic Transport Aircraft. NASA Contract NASR-117 Report 5798-1417-III, National Aeronautics and Space Administration, 1962—1963.
303. Holgate, S. M.: Spraywelding. Electroplat. Met. Spray., (6) 239—245, 1954.
304. Holgate, S. M.: A Review of the Use of Molybdenum in Metal Spraying. Electroplat. Met. Finishing, **8**, (7) 258—262 (1955).
305. Holtz, F. C.: High-Temperature Oxidation Protective Coatings for Vanadium-Base Alloys. Navy Office of Weapons, NOW 61 806, U.S. Navy, 1962.
306. Hooton, N. A.: Materials Property Data. Bendix Products Corp., Defense Documentation Center AD-266 937, 1961.
307. Hopkins, V., M. Lavik, W. Clow, C. Bolze, and R. Hubbell: Development of New and Improved High-Temperature Solid Film Lubricants. Wright-Patterson Air Force Base, TDR-64-37, U.S. Air Force, 1966.
308. Hopkins, V., R. D. Kremith, and J. W. Rosenberry: Solid Lubricant Coatings Applied by Plasma Spray. Amer. Ceram. Soc. Bull., **47**, (9) 813—818 (1968).
309. Hopkins, V., R. Hubbell, and R. Kremith: Plasma Spraying—A New Method of Applying Solid Film Lubricants. Amer. Soc. of Lubri. Eng., Toronto, Canada, May, 1966.
310. Houghton, E. K.: Apparatus for Coating with Glass or Enamel. U.S. Patent 1, 586, 990 (1926).

311. Hrach, G. C.: Preparation of Space Hardware by Plasma Flame Throwing Techniques. ASTM Paper 26, Amer. Soc. of Testing Mater., October, 1962.
312. Hubbel, W. G.: Ceramic Coated Exhaust Systems. Aircraft Prod., **13**, (15) 351 (1951).
313. Huffadine, J. B., and A. G. Thomas: Flame Spraying as a Method of Fabricating Dense Bodies of Alumina. Powder Met., **7**, (14) 290—299 (1964).
314. Humbarger, F. F.: Effective Tooling for Flame Plating. Machinery, **70**, (6) 132—136 (1963).
315. Huminik, J.: High-Temperature Inorganic Coatings. New York: Reinhold Publishing Corp., 1963.
316. Hutzler, J. R.: Research and Development Work on Development of Thin Organic Rolled Film Capacitor. Linde Div. Union Carbide Corp., Defense Documentation Center AD-623 905, 1965.
317. Ingham, H. S., and A. P. Shepard: Metallizing Handbook. Volume I, II, III, Long Island, N.Y.: Metco Inc., 1951.
318. Ingham, H. S.: Flame Sprayed Protective Coatings, Made from Refractory Materials. Mater. Prot., **1**, (1) 74—78 (1962).
319. Ingham, H. S.: Sprayed Metals as a Base for Paints. Corro., **13**, (4) 252—256 (1957).
320. Ingham, H. S.: Developments in Sprayed Metal Coatings. Metal Working Prod., **100**, (6) 1521 (1956).
321. Ingham, H. S.: Flame-Sprayed Coatings. Chap. 15 of Composite Engineering Laminates, Ed. Dietz, A.G.H., Cambridge, Mass.: M.I.T. Press, 1970.
322. Ingham, H. S., and A. P. Shepard: Evaluation Methods and Equipment for Flame-Sprayed Coatings. Research Laboratory Report # 106. Long Island, N.Y.: Metco Inc., 1963.
323. Ingraham, J. M., and M. M. Mardirosian: Feasibility Study of a Multilayer Flame-Spray Coated and a Brazed Platelet-Coated Armor Plate as a Defense Against Heat Ammunition. Technical Report # WAL TR 161.86/2, Watertown Arsenal Labs., U.S. Army, 1960.
324. Jackman, P.: Before You Plasma Spray. Amer. Machinist, **108**, (3) 56—57 (1964).
325. Jackson, C. M., and A. M. Hall: Surface Treatments for Nickel and Nickel-Base Alloys. Battelle Memorial Inst., Defense Documentation Center AD-634 076, 1966.
326. Janowiecki, R. J., G. F. Schmidt, Jr., and M. C. Willson: Plasma Sprayed High-Temperature Polymeric Coatings. SAMPE J., **4**, (41) 40—49 (1968).
327. Janowiecki, R. J., M. C. Willson, and D. H. Harris: Plasma Sprayed Thermoelectric Materials. Monsanto Research Corp., Defense Documentation Center, AD-832 678, 1968.
328. Janowiecki, R. J., *et al.*: High-Temperature Thermoelectric Generator. Wright-Patterson Air Force Base, TDR 62-896, Part 2, U.S. Air Force, 1963.
329. Johnson, R. L.: Flame Sprayed Metallized Aluminum for Protection of Carbon Steel Parts in the Titan B Missile Silo. Martin Marietta Corp., Defense Documentation Center, AD-292 385, 1961.
330. Johnson, R. L., and W. M. Wheildon: Faster Plasma Coating. Mater. Design Eng., **56**, (6) 16—17 (1962).
331. Jones, R. A., and L. T. Fuszara: Problems of Utilizing Ceramics in Aircraft Power Plant Construction. Amer. Ceram. Soc. Bull., **32**, (1) 7—9 (1953).
332. Kalsing, H.: Keramische Stoffe für Raketenantriebe. Sprechsaal Keram., Glas, Email, **89**, (12) 414—416 (1956).
333. Katts, N. V., E. V. Antoshin, D. G. Vadivasov, G. D. Volpert, and L. M. Kamionskii: Spray Metallizing. Army Foreign Science and Technology Center, FSTC-HT-23-10-68, U.S. Army, 1966.

334. Katz, N. N.: Einige Probleme der Lichtbogenspritztechnik in der Sowjetunion (Several Problems of Arc Spraying Technology in the Soviet Union). Schweißtech., **7**, (4) 137 to 141 (1957).
335. Katz, N. N., and E. M. Linnik: Elektrometallspritzen (Electric Metal Spraying). Moskow: Zelchosgis Verlag, 1953.
336. Kenderi, T.: Gefüge und Schutzwirkung gespritzter Metallschichten (Structure and Protective Characteristics of Sprayed Metal Layers). Metalloberfläche, **13**, (5) 133—134 (1959).
337. Kennedy, A. J.: A Study Program on Cesium Vapor Filled Thermionic Converters having High Vacuum Work Function Emitter Materials. Martin Marietta Corp., Defense Documentation Center AD-608 554, 1964.
338. Kennedy, A. J., and D. S. Trimmer: The Performance of Ruthenium as an Electrode in a Thermionic Converter. Martin Pattern Co., Defense Documentation Center, AD-465 704, 1964.
339. Kinas, E. N.: Titanium Alloy for T-109 Medium Tank Track Development of Processing Procedures and Manufacturing Techniques. Water Pollution Research Board Watford England, Defense Documentation Center AD-264 834, 1961.
340. King, B. W.: Ceramic Coated Metals for Industry. Battelle Tech. Rev., **3**, 39—42 (1954).
341. King, R. M.: Ceramic Coatings for Metals. Defense Documentation Center AD-19325, 1953—1954.
342. Kirner, K.: Plasmagespritzte, elektrisch isolierende Keramikschichten (Plasma Sprayed Electrically Insulating Ceramics Coatings). Physikalische Laboratorien, Stuttgart West Germany, **2**, (5) (1968).
343. Kizer, D. E., and D. E., Lozier: Powder Metallurgy Review of Recent Developments. Defense Metals Information Center, N 64-33509, 1964.
344. Kizer, D. E., and D. E. Lozier: Powder Metallurgy Review of Recent Developments. Defense Metals Information Center, N 65-24355, 1965.
345. Klein, L.: Evaluation of Ablative and Insulation Coatings for Missile Structure. Martin Marietta Corp., Defense Documentation Center AD-453 120, 1960.
346. Klopp, W. D., and C. F. Powell: Development of Protective Coatings for Tantalum-Base Alloys. Wright-Patterson Air Force Base, TR 61-676, U.S. Air Force (No Date).
347. Knanishu, J.: Galvanic Protection by Metal Spray Method. Rock Island Arsenal, Illinois, Defense Documentation Center, AD-412 499, 1963.
348. Koch, J. C.: Plasma-Sprayed Uranium Carbide Coating of Graphite Crucibles. Amer. Ceram. Soc. Bull., **49**, (5) 549—550 (1970).
349. Koch, H., and I. Adams: Einfluß der Arbeitsbedingungen auf die Eigenschaften gespritzter Stahlschichten (Effect of Working Conditions on the Properties of Sprayed Steel Layers). Schw. U.-Schn., **5**, (4) 131—142 (1953).
350. Koenig, R. F.: Manufacturing Techniques for Application of Erosion Resistant Coatings to Turbine Engine Compressor Components. Defense Documentation Center, AD-837 238, 1968.
351. Kordes, E.: Kristallchemische Untersuchungen über Silicium Oxydverbindungen mit spinellartigem Gitterbau über γ-Fe_2O_3. Z. Krist., **91**, 193—228 (1935).
352. Koubek, F. J., H. A. Perry, and I. Silver: Polaris Materials Program I Literature Survey II Thermal and Mechanical Properties of Ceramics, Cermets and Metals. Nav Ord Report 6056, U.S. Naval Ordnance Laboratory, U.S. Navy, 1958.
353. Koubek, F. J., and A. R. Timmins: High-Temperature Testing of Ceramics for Reentry Body Applications. Nav Ord Report 6298, U.S. Naval Ordnance Laboratory, U.S. Navy, 1959.
354. Kozlovskiy, A. L.: Protective Flame-Spray Coatings. Defense Documentation Center, AD-405 249 (No Date).

355. KRAMER, B. E.: Development of Arc Spraying Processes and Materials for Solid Rocket Nozzles. NORD 18119, U.S. Navy, 1961.
356. KRAMER, B. E., M. A. LEVINSTEIN, and J. W. GRENIER: The Effect of Hot Plasma Deposition on the Stability of Non-Metallic Materials. General Electric Co., Defense Documentation Center, AD-264 602, 1961.
357. KRASKA, I. R., and E. KUBIAK: Investigation of Nondestructive Test Methods for Metallized Tank Engine Cylinders. General American Transportation Corp., Niles, Ill., Technical Report, December, 1966, February, 1968.
358. KRASNOV, A. N., and S. I., SHARIVKER: Plazmennye Pokrytiaa (Plasma Coating). Transactions Vysokotemperaturnye Pokrytiia, Seminar Po Zharostoikim Pokrytiiam, Leningrad, U.S.S.R., 1965.
359. KREIDER, K. G.: Services and Materials Necessary to Develop a Process to Produce Fibrous Reinforced Metal Composite Materials. United Aircraft Corp., Defense Documentation Center AD-478 306, 1965—1966.
360. KREIDER, K. G., and G. R. LEVERANT: Boron Fiber Metal Matrix Composites by Plasma Spraying Spraying. Wright-Patterson Air Force Base, TR-66-219, U.S. Air Force, 1966.
361. KREIDER, K. G., and G. R. LEVERANT: Born Aluminum Composite Fabricated by Plasma Spraying. Advanced Fibrous Reinforced Composites, **10**, F1—F9, Science of Advanced Materials and Process Engineering Series, N. Hollywood, California: Western Periodicals Co., 1966.
362. KREIDER, K. G., R. D. SCHILE, E. M. BREINAN, and M. A. MARCIANO: Plasma Sprayed Metal Matrix Fiber Reinforced Composites. Wright-Patterson Air Force Base, TR-68-119, U.S. Air Force, 1968.
363. KREKELER, K., and K. STEINEMER: Metallspritzen. Werkstattbücher, No. 93, Berlin-Göttingen-Heidelberg: Springer-Verlag, 1952.
364. KREMITH, R. D., and J. W. ROSENBERRY: Plasma Spray Application of Plastic Materials Including Thermosetting Epoxies and Polyesters and Thermoplastic Polyethylene and Polyamides. Advances in Structural Composites, **12**, SAMPE Science of Advanced Materials and Process Engineering, N. Hollywood, California: Western Periodicals Co., 1967.
365. KRETZSCHMAR, E.: Das Metallspritzverfahren (Metal Spraying Technology). Halle/Saale: VEB Karl Marhold Publishers, 1953.
366. KRIER, C. A.: Coating for the Protection of Refractory Metals. Defense Metals Information Center, Battelle Memorial Institute Defense Documentation Center, AD-271 384, 1961.
367. KULAGIN, I. D., and A. V. NIKOLAEV: The Arc Plasma Jet as a Heat Source in the Working of Materials. Welding Prod., **5**, (9) 1—11 (1959).
368. LAKE, F. N., E. J. BREZNYAK, and G. S. DOBLE: Tungsten Forging Development Program. Thompson Ramo Wooldridge Inc., Defense Documentation Center, AD-258 195, 1961.
369. LASZLO, T. S.: Mechanical Adherence of Flame-Sprayed Coating. Amer. Ceram. Soc. Bull., **40**, (12) 751—755 (1961).
370. LAWRIE, W. E., *et al.*: Non-destructive Methods for the Evaluation of Ceramic Coatings. Wright-Patterson Air Force Base, WADD TR-61-91, Part II, Part III, Part IV, U.S. Air Force (No Date).
371. LEEDS, D. H.: Some Observation of the Interface Between Plasma Sprayed Tungsten and 1020 Steel. Aerospace Corp., Defense Documentation Center AD-803 286, 1962.
372. LEEDS, D. H.: The Interface Between Plasma-Sprayed Tungsten and 1020 Steel and the Mechanism of the Plasma-Sprayed Coating Bond. Metallurgy and Ceramic Materials Sciences Laboratory, Aerospace Corp. (No Date).

373. LEEDS, D. H.: Materials and Structure Program, High Mach Phase III Arc Plasma Spray Investigations. Aerospace Corp., TDR-930 2240, U.S. Air Force, 1962.
374. LEEDS, D. H.: Coatings on Refractory Metals. Chapt. 7, Ceramics for Advanced Technologies, J. E. HOWE, W. C. RILEY, Ed., New York: John Wiley and Son, 1965.
375. LEGGETT, H., and R. L. JOHNSON: Development and Evaluation of Insulating Type Ceramic Coating. Wright-Patterson Air Force Base, TR-59-102 P 2, U.S. Air Force, 1960.
376. LENTZ, J. K.: Research and Development of Unitized, Miniaturized Relay. Philips Labs., Inc., Defense Documentation Center, AD-250 963 (No Date).
377. LESZYNSKI, S. W.: The Development of Flame Sprayed Sensors. Boeing Co., Defense Documentation Center, AD-283 958, 1961.
378. LEVINSTEIN, M. A., A. EISENLOHR, and B. E. KRAMER: Properties of Plasma Sprayed Materials. Welding J., **40**, (1) 8 s—13 s (1961).
379. LEVINSTEIN, M. A.: Properties of the Refractory Metals Sprayed Under Controlled Environment, J. Metals, **14**, (2) 137 (1962).
380. LEVINSTEIN, M. A., *et al.*: Properties of Plasma Sprayed Materials. Wright-Patterson Air Force Base, TDR-62-201 and TR-60-654, U.S. Air Force, 1962.
381. LEVINSTEIN, M. A., and C. E. JOHNSON: Properties of Plasma Sprayed Materials. Quarterly Reports, AF 33 (616)-6376, Task 73810, January-March, 1961, April-June, 1961, July-September, U.S. Air Force, 1961.
382. LEVINSTEIN, M. A.: Plasma Spraying-State of the Art. Report AF 33 (616)-6376, Task 7381, U.S. Air Force, 1961.
383. LEVINSTEIN, M. A., ed.: Recent Advances in Arc-Plasma Metallizing. Metal Finishing J., **6**, (72) 467—474 (1960).
384. LEVITT, A. P., and M. LEVY: Flame-Sprayed Metallic and Ceramic Coatings for Army Applications. Presented at 3D International Metallization Conference, Madrid, May, 1962, Army Materials Research Agency, MS-64-01, U.S. Army, 1962.
385. LEVY, A. V.: Ceramic Coatings for Insulation. Metal Prog., **75**, (3) 86—89 (1959).
386. LEVY, M.: Evaluation of Flame-Sprayed Coatings for Army Weapons Applications. Amer. Ceram. Soc. Bull., **42**, (9) 498—500 (1963).
387. LEVY, M.: Trip Report to the III International Metallization Conference, Madrid, Spain. Watertown Arsenal Laboratories, U.S. Army, 1962.
388. LEVY, M., and A. P. LEVITT: Application of Flame-Sprayed Coatings at Watertown Arsenal. WAL TR-371.1/1, U.S. Army, 1961.
389. LEVY, M., and D. J. SELLERS: A Study of the Effect of Heat Treatment on the Microstructure and Properties of Sprayed Molybdenum. Army Materials Research Agency, TR-64-50, U.S. Army, 1964.
390. LEVY, M., G. N. SKLOVER, and D. J. SELLERS: Adhesion and Thermal Properties of Refractory Coating-Metal Substrate Systems. Army Materials Research Agency, TR-66-01, U.S. Army, 1966.
391. LEWIS, W. J.: Coatings for Advanced Thrust Chambers. NASA-CR-72604, National Aeronautics and Space Administration, 1968.
392. LIEBERT, C. H.: Spectral Emittance of Aluminium Oxide and Zinc Oxide on Opaque Substrates. NASA TN D-3115, National Aeronautics and Space Administration, 1965.
393. LOHRIE, B.: Plasma Jets Headed for Production Roles. Steel, **147**, 110—112 (1960).
394. LOMATZ, J. P., and D. H. LEEDS: Douglas Process Standard 9,500 Flame Sprayed Ceramic Coatings. Douglas Aircraft Co., Inc., 1957.
395. LONG, J. D., and J. PSAROUTHAKIS: Investigations Using Segmented Collector Thermionic Converters. Office of Naval Research Report 099-363, U.S. Navy, 1966.
396. LONGO, F. N.: Techniques for Improving Plasma-Sprayed Tungsten. Society of Aerospace Material and Process Engineers, National Symposium on Materials for Space Vehicle Use, Seattle, Washington, Volume I, 1963.

397. Longo, F. N.: Metallography of Flame Sprayed Coatings of Metco 404, Nickel Aluminide Powder. Research Lab. Report 107, Long Island, N.Y.: Metco Inc., 1963.
398. Longo, F. N.: Metallurgy of Flame Sprayed Nickel Aluminide Coatings. Welding Res. Supplement, **47**, (2) 665—695 (1966).
399. Ludke, G., and J. Sternkopf: Flame-Spraying of Ceramic Coatings. Wright-Patterson Air Force Base FSTC-381-T 65-271, U.S. Air Force, 1964.
400. Lutz, O.: Werkstoffe für feuergerührte Bauteile im Strahltriebwerken. Luftfahrttechn., **1**, 118—123 (1955).
401. Mac-Dowall, K.: Preliminary Evaluation of Flame Sprayed Aluminum on H-11 Steel. TFD-59-1162, North American Aviation, Inc., Calif., 1959.
402. Machenschalk, R.: Aufgespritzte Molybdänüberzüge (Sprayed Molybdenum Coatings). Planseeber. Pulvermet., **4**, (4) 80—84 (1956).
403. Mackay, T. L., and A. N. Muller: Plasma Sprayed Dielectric Coatings for Heat Sinks in Electronic Packaging. Amer. Ceram. Soc. Bull., **46**, (9) 833 (1967).
404. Malik, M. P.: Die Anwendung des Plasma Metallspritzverfahrens bei der Reparatur von Flugzeugbauteilen aus Al- und Mg-Legierungen (Use of Plasma Metal Spray Coating in Repairing Aircraft Components Made from Al and Mg Alloys). Luftfahrttech. Raumfahrttech., **15**, 188—191 (1969).
405. Malinofsky, W. W., and R. W. Babbitt: Fine-Grained Ferrites, III, $Ni_{(1-x)}Co_{(x)}Fe_2O_4$, RF Properties. J. of Appl. Phys., **35**, (3) Part 2, 1012—1014 (1964).
406. Manning, H. E.: Spray Metallizing of Plastic Laminates-Process Specification for. Defense Documentation Center, AD-817 435 L, 1967.
407. Mansford, R. E.: Sprayed Aluminum and Zinc in Corrosive Environments. Corrosion Tech., **3**, (10) 314 (1956).
408. Manuel, L.: Properties and Applications of the Flame-Sprayed Refractory Coatings. Metal Finishing J., **4**, (44) 313—316 (1958).
409. Marnock, K.: Research on High-Temperature Oxidation Resistant Hafnium-Tantalum Systems. Contract AF 33 (615)-1628, Report 25142, U.S. Air Force, 1964.
410. Marshal, P. H.: Metal Spraying. J. Inc. Plant. Eng., (8) 299, 309 (1953).
411. Maruo, H., and M. Okada: New Plasma Spraying and Its Application. Brit. Welding J., **15**, 371—386 (1968).
412. Marynowski, C. W., F. A. Halden, and E. P. Farley: Variables in Plasma Spraying. Electrochem. Tech., **3**, (3—4) 105—115 (1965).
413. Mash, D. R.: Plasma-Arc Spraying of Space-Age Materials. Western Machinery Steel World, **3**, (4) 48—53 (1962).
414. Mash, D. R.: Plasma-Arc Spraying of Refractory Metals. Canadian Machinery Metalwork., **73**, (8) 81—83 (1962).
415. Mash, D. R., N. E. Weare, and D. L. Walker: Process Variables in Plasma-Jet Spraying. J. Metals, **13**, (7) 473—478 (1961).
416. Mason, C. R., J. D. Walton, and C. A. Murphy: Fused Silica Rocket Nozzles. Georgia Inst. of Tech., NOrd-18564, U.S. Navy, 1960.
417. Mason, C. R., J. D. Walton, C. A. Murphy, and A. T. Sales: Investigation of High-Temperature Resistant Materials. Georgia Inst. of Tech., NOrd-15701, U.S. Navy, 1961.
418. Mathauser, E. E.: Ceramic-Metal Composites for Structural Applications. NASA-129-03-09-01-23, National Aeronautic and Space Administration (No Date).
419. Matting, A.: Metal Spraying from Gas Flame to Plasma Jet. Brit. Welding J., **4313**, (9) 526—532 (1966).
420. Matting, A.: Schweißtechnische Oberflächenbehandlung zur Herstellung von Überzügen (Surface Preparation Based on Surface Preparation Techniques for Welding for Producing Coatings). Maschinenbau, Der Betrieb, **14**, (23/24) 683—686 (1935).

421. Matting, A., and K. Becker: An Experimental Investigation of the Metal Spraying Process. Electroplat. Metal Finish., **8**, 101—103, 143—145 (1955), and **9**, 85, 88, 126—128, 147—148 (1956). [Also in Schw. U. Schn., **6**, (4) 127—141 (1954).]
422. Matting, A., and K. Becker: Investigations Into the Metal Spraying Process. Eng. Digest., (8) 309 (1954).
423. Matting, A., and W. Raabe: Der Aufbau von Metallspritzschichten (The Formation of Sprayed Metal Layers). Schw. U. Schn., **8**, (10) 369—374 (1956).
424. Matting, A., and H. D. Steffens: Die Wissenschaftlichen Grundlagen des Metallspritzens (The Scientific Principles of Metal Spraying). Mitt. Forschungsges., Blechverarb., (16/17), 220—230 (1962).
425. Matting, H. A., and H. D. Steffens: Haftung und Schichtaufbau beim Lichtbogen und Flammspritzen (Adhesion and Layer Formation for Arc and Flame Spraying). Metall., **17**, (6) 583—593, (9) 905—922, and (12) 1213—1227 (1963).
426. Matting, A., and H. D. Steffens: Beitrag zur Erforschung des Lichtbogen-Metallspritzprozesses (Contribution to the Research on Arc Metal Spraying Process). Zeitschrift für Metallkunde, **53**, (2) 138—144 (1962).
427. McCullum, D. E., and N. L. Hecht: Plasma Sprayed Coatings for Thermal Protection of Rocket Sled Components. Engineering Test Memorandum 12, University of Dayton, Contract AF 33 (615)-1312, U.S. Air Force, 1966.
428. McDaniels, D. L., R. W. Jeck, and J. W. Weeten: Metals Reinforced with Fibers. Metal. Progr., **78**, (6) 117 (1960).
429. McDermott, W., and R. Dickinson: The Influence of Fuel Gases on the Spraying of Metal Powders. Electroplat. Met. Spray., (8) 309 (1953).
430. McGeary, T. C.: Engineering Applications for Flame Plating. Metal. Progr., **87**, (1) 80—86 (1965).
431. McLean, W. J.: Relative Benefit Afforded by Coating a Heat Sink with a Thin Ceramic Layer. NavOrd 6694, U.S. Navy, 1959.
432. Mehegan, P.: Rokide Z Thrust Chamber Nozzle Coatings. Rocketdyne Report CER 0120-7301, 1959.
433. Merry, J. D., and C. H., Vandracek: Three Uses of Flame Sprayed Al_2O_3. Materials Laboratories Westinghouse Electric Corp., 1963.
434. Meuer, M.: Improvements in and Relating to Coating Heat Resisting Articles by Spraying with Enamels, Glazes and Like Substances. Patent Specification 179, 216 (1922).
435. Meyer, H.: On the Flame-Spraying of Aluminum Oxide. Base Mater. Corrosion, **11**, (10) 601—616 (1960).
436. Meyer, H.: Flame-Spraying of Alumina. Royal Aircraft Establishment Defense Documentation Center, AD-258 168 (No Date).
437. Meyer, H.: Das Verhalten von Pulvern im Plasmastrahl. Ber. Dtsch. Keram. Ges., **39**, (H2) 115—124 (1963).
438. Meyer, H., and A. Dietzel: Das Flammenspritzen von keramischen Überzügen (The Flame Spraying of Ceramic Coatings). Ber. Dtsch. Keram. Ges., **37**, (4) 136—141 (1960).
439. Meyer, R. J.: Evaluation of Rokide Z Coatings on Nozzle. Report 038-086 McDonnell, St. Louis, Missiouri (No Date).
440. Michael, H. J.: Aircraft Coating, Testing, and Evaluation. North American Aviation, Inc., Defense Documentation Center, AD-814 759, 1967.
441. Miller, H. S.: Practical Hard Facing with Fused Self Fluxing Metallized Coatings. Welding J., **34**, (3) 214 (1955).
442. Miller, R. C., and A. W. Brunet: Surface Preparation and Fatigue in Metal Spraying. Electroplat. Metal Spray. (10) 393 (1954).
443. Mock, J. A.: Plasma Arc-Torch Fabricates Tough Materials. Mater. Design Eng., **49**, (3) 133—134 (1959).

444. Mock, J. A.: Flame Sprayed Coatings. Mater. Design Eng., **63**, (2) 89—104 (1966).
445. Monroe, R. E.: New Joining Processes for Uncommon Materials. Mech. Eng., **83**, (8) 79—80 (1961).
446. Montgomery, E. T., J. E. Anthony, and K. P. Paoletti: Cermet Coatings for Gas Turbines Burning Residual Fuel Oils. Ohio State University, Universal Research Foundation, Defense Documentation Center, AD 47 724, 1954.
447. Moore, D. G., A. G. Eubanks, H. R. Thornton, W. D. Hayes, and A. W. Grigler: Studies of the Particle Impact Process for Applying Ceramic Cermet Coatings. Defense Documentation Center, AD-266 381, 1961.
448. Moore, D. G., W. D. Hayes, and A. W. Grigler: Velocity Measurements of Flame-Sprayed Aluminum Oxide Particles. Phase I, Contract AF 33 (616) 59-19, Project #8 (88—702), U.S. Air Force, 1959.
449. Moore, V. S., and A. R. Stetson: Evaluation of Coated Refractory Metal Foils. Wright-Patterson Air Force Base, TDR-63-4006, U.S. Air Force, 1963.
450. Morenov, I. A., and A. V. Petrov: Opredelnie Skorosti Chastits Napyliaemogo Materiala Metodom Skorostnoi Kinos Emki (Determination of the Particle Velocity of Sprayed Material by the Method of High-Speed Cinematography). Poroshkvaia Met., **7**, (9) (1967).
451. Moreton, R., and R. W. Gardiner: The Protection of Molybdenum from Oxidation at High-Temperatures with Zirconia/Glass Coatings. TN CPM 32, Royal Aircraft Establishment Farnborough, England, 1963.
452. Morozov, I. A.: Ostatochnye Napriazheniia Pri Plazmennom Napylenii. Mashinostroenie, (5) 111—115 (1969).
453. Morris, R. J.: Development of High Strength Materials for Solid Rocket Motors. General Electric Co., NOrd-18119, U.S. Navy, 1960.
454. Mosby, H. V.: Plasma Processes. Encyclopedia of Engineering Materials and Processes (pp. 479—480). Ed. by H. R. Clauser, New York: Reinhold, 1963.
455. Mosby, H. V.: Plasma-Jet Coating: Ultra-High-Temperature Applications for Rocket Motors. Aircraft Prod., **23**, (6) 206—208 (1961).
456. Moss, A. R., and W. J. Young: The Role of Arc-Plasma in Metallurgy. Powder Met., **7**, (14) 261—288 (1964).
457. Moss, M., and D. M. Schuster: Mechanical Properties of Dispersion Strengthened Spray-Quenched Al-V Alloys. ASM Trans. Quart., **62**, 201—205 (1969).
458. Moss, M.: Dispersion Hardening in Al-V by Plasma-Jet Spray Quenching. Acta Met., **16**, 321—326 (1968).
459. Muller, W. C., and A. K. Wolff: Study of Methods to Control Grain Size, Purity and Texture in Beryllium and Beryllium Alloys. Nuclear Metals Division, Textron Inc., NMI-8001. 6 NOW-65-0084, U.S. Navy, 1966.
460. Murphy, C. A., N. E. Poulos, and J. D. Walton: Spray-On Refractory Coatings System Considerations. Paper presented at National Pyro-Metallurgical Program, AIME, 1963.
461. Nagler, R. G.: Application of Spectroscopic Temperature Measuring Methods to Definition of a Plasma Arc Flame. Technical Report # 32—66, Jet Propulsion Lab. Cal. Tech., 1961.
462. Najmon, R. A.: Resistors, Fixed, Precision High-Temperature Radiation Resistant. Mallory and Co., Defense Documentation Center, AD 262 63, 1960.
463. Nash, D. R., N. E. Weare, and D. L. Walker: Process Variables in Plasma-Jet Spraying. J. Metals, **13**, (7) 473 (1961).
464. Nelson, C. E.: Method of Applying Protective Coatings. U.S. Patent 1, 566, 911, 1952.
465. Nelson, C. E.: High-Temperature Resistant Ceramic Coatings. Wright-Patterson Air Force Base, WADC 56-139, U.S. Air Force, 1955.

466. Nessler, C. G., and J. R. Palermo: Plasma Arc Coatings. Mater. Design Eng., **55**, (6) 109—113 (1962).
467. Newcomer, R.: Precoats for Adhesion of Sprayed Aluminum Coatings. McDonnell Aircraft Corp. A 241, Contract AF 33 (657)-11215, U.S. Air Force, 1953.
468. Newkirk, H. W.: Continuous Arc Fusion of Uranium Dioxide Powder. General Electric Co., Nuc. Sci. Abstr., (4) 1199 (1959).
469. Niedergeson, B. F.: Method of Producing Clear Vitreous Silica. General Electric Co., U.S. Patent 1, 896, 163, 1932.
470. Niehaus, W. R., J. E. Shrout, and R. G. Anderson: Structural Heat Shield for Re-Entry and Hypersonic Lift Vehicles (High-Temperature Composite Structure) Test Evaluation. Wright-Patterson Air Force Base, TDR-64-267-Part 2, Volume 1, U.S. Air Force, 1966.
471. Nikolayeva, T. N., V. G. Kuryatnikova, and N. S. Kudryavtseva: Anticorrosive Fluorplastic — 3 and Fluoroplastic-3M Coatings. Foreign Technology Div., U.S. Air Force, Defense Documentation Center, AD-405 242, 1962.
472. Nikolayyev, G. A., and A. I. Akuloc: Welding. Foreign Technology Division U.S. Air Force, Defense Documentation Center, AD-260 686 (No Date).
473. Nimvitskaya, T. A.: Deposition of Refraction Coatings with the Use of Plasma. Wright-Patterson Air Force Base, FTD-HT-23-176-69, U.S. Air Force, 1969.
474. Nolting, H. J.: Oxidation Resistant High-Temperature Protective Coatings for Tungsten. Thompson Ramo Wooldridge Inc., TM-3890 Quarterly Progress Report No. 3, November, 1965.
475. Northrop, H.: Fabrication of Pyrolytic Graphite Solid Rocket Nozzle Components. General Electric Co., NOrd-19119, U.S. Navy (No Date).
476. O'Brien, R. L.: Plasma Arc; New Fabricating Tool. S.A.E. J., **69**, (7) 84—86 (1961).
477. Oechale, S. T.: Metal Spraying-Development and Application. Metal Finishing J., **55**, (66) 71—76 (1957).
478. Okada, M., *et al.*: Fundamental Researches on Plasma Jet and Its Application. Tech. Rep. Osaka Univ., **10**, (384) 209—219 (1960).
479. Old, A. R.: Metal Spraying. J. Oil Color Chemists Assoc., **35**, (379) 20 (No Date).
480. Olievskii, M. I.: Povedenie V Plazme Karbidov Tsirkoniia I Niobiaa (Behavior of Zirconium and Niobium Carbides in a Plasma). Poroshkovaia Metall., **8**, 74—81 (1968).
481. Olievskii, M. I.: Plotnost' Keramicheskikh Plazmennykh Polrytii (Density of Ceramic Plasma Coatings). Poroshkovaia Metall., **9**, 38—43 (1969).
482. Orbach, H. K.: Ceramic Uses of Plasma Jet. Ceram. Ind., **79**, (5) 72—75 (1962).
483. Oxx, G. D.: Which Coatings at High-Temperature. Prod. Eng., **29**, 61 (1958).
484. Palena, M.: Flame Sprayed Ceramic Coating Techniques. Thiokol, Reaction Motors Division Report RMD-9368 F, 1964.
485. Palermo, J. R., and C. C. Polter: Plasma Spraying Present and Future. Internal Report, Thermal Dynamics Corp., Lebanon, New Hampshire (No Date).
486. Pankratov, B. M.: Nekotorye Metody Zashchity Konstruktsionnykh Materialov (Some Methods of Protecting Structural Materials). Transactions Vysokotemperaturnye Pokrytiia, Seminar Po Zharostoikim Pokrytiiam Leningrad, U.S.S.R., 1965.
487. Pasterick, N. R., and G. W. Fisher: Plasma Metallizing a Compressor Case. Amer. Machinist/Metalworking, **107**, (22) 87 (1963).
488. Pearcy, M. A.: Composition Plasma Arc Spraying. Lockheed Aircraft Corp., Sunnydale, Calif., Special Bibliography, No. SB 61-67, 1961.
489. Pechman, A.: Ceramics for High-Temperature Applications. Ceram. Age, **62**, (11) 27—31 (1953).

490. Pendleton, W. W.: Development of Magnet Wires Capable of Operation at 850° C and under Nuclear Radiation. Anaconda Wire and Cable Co., Defense Center, AD-267-176, AD-277-133, 1961—1962.
491. Pendleton, W. W.: Radiation-Resistant Magnet Wire for Use in Air and Vacuum at 850° C. ASD, Wright-Patterson Air Force Base, TDR 63 164, U.S. Air Force, 1963.
492. Pentecost, J. L., and H. Hahn: Nonfissionable Ceramic Coatings and Coatings Processes. Joint Conference on Nuclear Applications on Non-Fissionable Ceramics, American Ceramic Society, May, 1966.
493. Peters, F., and H. Engell: Über die Haftfestigkeit von Zünder auf Stahl (On the Adhesive Strength of Oxides on Steel). Arch. F. Eisenhw., **39**, (5) 275—282 (1959).
494. Phelps, H. C.: Plasma Flame Cutting of Mild Steel Seen as Competitive with Oxy-Fuel Process. Welding Eng., **45**, (12) 33—37 (1960).
495. Phipps, G. F., and W. G. Schreitz: Mogul Turbo-Jet (Wire Gas) Metallizing Gun and Accessories Submitted by Metallizing Company of America. Marine Engineering Lab., Defense Documentation Center, AD-226 670, 1958.
496. Phipps, G. F., and J. H. Siegel: Development of Procedure and Application of Cladding to Rotavac Rotor. Defense Documentation Center, AD-94 679 L, 1956.
497. Pirogov, I. A., R. M. Buron, and A. L. Friedberg: Electrical Properties of Al_2O_3-Nickel Metal Multilayer Flame-Sprayed Coatings. Amer. Ceram. Soc. Bull., **45**, (12) 1071—1074 (1966).
498. Pirogov, I. A., and L. D. Svirskii: Protsessy Formirovanii Pokrytii, Nanosimykh Metodam Gazoplamennogo Napyleniia (Processes of Formation of Coatings Deposited by the Method of Gas-Flame Spraying). Transactions Temperaturo ustorchivye Zashchitnye Pokrytiia Leningrad, 1966.
499. Plankenhorn, W. J., and D. G. Bennett: Effect of Ceramic Coatings on the Fatigue Strength of Stainless Steel. Contract AFW 33 (038) dc 14520, U.S. Air Force, 1954.
500. Plummer, M.: The Formation of Metastable Aluminas at High-Temperatures. J. Appl. Chem., **8**, 35 (1958).
501. Plunkett, J. D.: NASA Contributions to the Technology of Inorganic Coatings. NASA SP-5014, Technology Survey, National Aeronautics and Space Administration (No Date).
502. Podkovich, E. G., *et al.*: The Structure and Properties of Pseudo-Alloys Obtained by Electric and Flame Metal Spraying. TR. Rostovsk, Inst. Sel'sk. Khoz Mashinostroenis, **12**, 46—51 (1959).
503. Poe, A. H., and H. E. Shigley: Boeing-Wichita Materials and Research Development Programs, 1957—1961. Defense Documentation Center, AD-271 166, 1961.
504. Porembka, S. W., H. D. Hanes, and P. J. Gripshover: Powder Metallurgy of Beryllium. Battelle Memorial Institute, Defense Documentation Center, AD-821 672, 1967.
505. Poulos, N. E., C. A. Murphy, and J. D. Walton: Ceramic Systems for Missile Structural Applications. Georgia Institute of Tech., NOW 630143 A 651, 1963.
506. Poulos, N. E., and S. R. Elkins: High-Temperature Ceramic Structures. Georgia Institute of Technology, NOrd-15701, U.S. Navy, 1962.
507. Poulos, N. E., S. R. Elkins, and J. D. Walton: Investigation of High-Temperature Resistant Materials. Georgia Institute of Technology, NOrd-15701, U.S. Navy, 1961.
508. Poulsen, S. C.: The Oxyacetylene Plasmadyne of Plasma Arc. Machine Moderne, **56**, (4) 25—29 (1962).
509. Pratt, D. S., E. Shoffner, and E. E. Keller: Literature Survey. General Dynamics, Defense Documentation Center, AS-402 166, 1959.
510. Princ, F.: Heißpritzen von Metallen und anderen Stoffen (Hot Spraying of Metals and Other Substances). Tech. Z. f. praktisches Metall., **54**, (1) 27—31 (1960).
511. Pugh, J. W.: Powder Metallurgy of Columbium. General Electric Co., Defense Documentation Center, AD-237 899 (No Date).

512. Rairden, J. R.: Porous Bodies of Tantalum, Niobium, and Aluminum Fabricated by Metal-Spray Processes. General Electric Co., Schenectady, New York, 1966.
513. Ranz, W. E.: On Sprays and Spraying. Pennsylvania State University Engineering Research Bulletin, No. 65, 1965.
514. Rausch, J. J., and F. C. Holtz: High-Temperature Oxidation Protective Coatings for Vanadium-Base Alloys. Illinois Institute of Technology Defense Documentation Center, AD-296 760, 1963.
515. Reaves, W. A., and E. J. Chapin: An Investigation of Barrier Coatings on Graphite Molds for Coating Titanium. Naval Research Lab., Defense Documentation Center, AD-623 992, 1965.
516. Reed, B. L., and W. H. Jones: The Investigation of the Nature of the Forces of Adhesion. Defense Documentation Center, (ASTIA) AD-15644 (No Date).
517. Reed, L., R. McRae, and C. Barnes: Ceramic Electron Devices. Eitel-McCullough, Inc., Defense Documentation Center, AD-414 907, 1963.
518. Reed, R.: Development of Manufacturing Technology on Organic and Inorganic Foams for High-Temperature Radome Applications. Whittaker Corp., Calif., Defense Documentation Center, AD-824 728, 1967.
519. Reininger, H.: Finishing Supplement Sprayed Metal Coatings. Metal Ind., **52**, (3) 251, (4) 255, 291 (1954).
520. Richardson, L. D.: Ceramics for Aircraft Propulsion Systems. Amer. Ceram. Soc. Bull., **33**, (5) 135—137 (1954).
521. Richmond, J. C., H. G. Lefort, H. Williams, and W. N. Harrison: Ceramic Coatings for Nuclear Reactors. J. Amer. Ceram. Soc., **38**, 72—80 (1955).
522. Richter, W.: Mischkeramische Werkstoffe für hohe Temperaturen. Silikattech., **8**, (9) 387—389 (1957).
523. Riesen, A. E.: Tungsten Extrusion Development Program. Wright-Patterson Air Force Base, IR 7 793 V 4, U.S. Air Force, 1962.
524. Riley, M. W.: New Flame Sprayed Ceramics. Mater. Methods, **42**, (3) 96—98 (1955).
525. Robiette, C. A.: Metal Spraying for Corrosion Protection. Ind. Finishing, **6**, (69) 564 (No Date).
526. Rodes, T. W.: Metal Spraying for Materials Handling. Ind. Eng. Chem., **44**, (1) 127 A (1952).
527. Roland, E. H., and G. B. Hood: Development of New and Improved Forging Lubricants. TRW Equipment Labs., Ohio, Defense Documentation Center, AD-822 137 (1967).
528. Rooksby, H. P.: The Preparation of Crystalline γ-Alumina. J. Appl. Chem., **8**, (1) 44—49 (1958).
529. Root, D. R., and C. H. Savage: Determination of Mechanical and Thermophysical Properties of Coated Refractory and Superalloy Thin Sheet. AFML, Wright-Patterson Air Force Base, RTD-TDR-63-4068, U.S. Air Force, 1963.
530. Roper, E. H.: An Improved Method of Oxy-Fuel Combustion. Welding J., **34**, (4) 337—344 (1955).
531. Rose, K.: New Aluminized Coating. Mater. Methods, **43**, (3) 104 (1956).
532. Rosenberry, J. W., and J. C. Wurst: Test Program for the Evaluation of Protective Coatings for the XLR-99 Thrust Chamber. S.A.M.P.E. National Meeting, November, 1961.
533. Rosenthal, J. J., and M. C. Tinkle: Flame Spraying Uranium Oxide. Report L 443961, Los Alamos Scientific Laboratory, New Mexico, 1967.
534. Rothenberg, H. C., and G. W. Walters: Ferrite Materials for Microwave Frequencies. General Electric Co., Defense Documentation Center, AD-250 183, 1960.
535. Rotrekl, B.: Metal Coated Plastics and Their Application. Army Foreign Science and Technology Center, Defense Documentation Center, AD-457 563, 1965.

536. Rous, W. C.: Selecting Ceramic Coatings for Jet Engine Parts. Mater. Methods, **38**, (6) 116—119 (1953).
537. Rundle, N. L.: Testing and Evaluation of Wear-Resistant Materials for High Performance Hydraulic Pump Components. Paper Presented at 21st National Confernce on Fluid Power, October, 1965.
538. Sagel, K.: Eigenschaften von Spritmetallüberzügen. Metalloberfläche, **11**, 255 (1957).
539. Sales, A. T., *et al.*: Supersonic Rain Erosion Resistant Coating Materials. Wright-Patterson Air Force Base, AFML-TR-68-364, Part I, Part II, U.S. Air Force, 1968, 1969.
540. Santoli, P. A.: Extruding and Drawing Molybdenum to Complex Thin H-Section. Allegheny Ludlum Steel Corp., Penna., Defense Documentation Center, AD-421 882, 1964.
541. Sauerwald, F.: Über synthetische Festkörper, XIV: Schlagsinterversuche kurzer Dauer (On Synthetic Solids, XIV: Impact Sintering Experiments of Short Duration). Z. f. Physik. Chem., **209**, 206—221 (1958).
542. Sayre, S.: Development of Fused Metal Coatings. Welding J., **31**, (1) 35—39 (1952).
543. Schiller, R. J.: Plasma Arc Fabrication and Coatings. Presented at the Fourth Pacific Area National Meeting of ASTM, Paper 27, October, 1962.
544. Schlichting, H. D., and H. Wulf: Zur Messung statischer Beanspruchungen großer Bauteile bei hohen Temperaturen mit Dehnungsmeßstreifen (Strain-Gauge Measurements of High Static Loads on Large Structural Components at High Temperature). Archiv für technisches Messen und industrielle Meßtechnik. 1967.
545. Schoop, M. V.: A Modern Electric Arc Pistol. Electroplat. Metal Spray., (6) 33 (1964).
546. Schoop, M. U., and H. Guenther: Das Schoopsche Metallspritzverfahren (The Schoop Metal Spraying Technique). Stuttgart: Franckh Publishers, 1917.
547. Schulz, D., P. Higgs, and J. Cannon: Research and Development on Advanced Graphite Materials Vol. XXXIV Oxidation—Resistant Coatings for Graphite. Wright-Patterson Air Force Base, WADD TR-61-72, U.S. Air Force, 1964.
548. Schwartz, H.: Plastics for Flame Spraying and Their Characteristics. Plastics and Rubber, **4129**, 13—26 (1965).
549. Seghezzi, H., and E. Gebhardt: Aufbau und Bewertung von Flammspritzschichten (Formation and Evaluation of Flame Sprayed Layers). Ind.-Anz., **80**, (49) 708—713 (1958).
550. Selover, T. B.: Properties of Nickel Fume Generated in a Plasma Jet. Metal Progr., **82**, (8) 1544 (1962).
551. Shepard, A. P.: Sealer Extends Rust-Free Life for Metallized Structures. Iron Age, **191**, (15) 69—71 (1963).
552. Sherwood, P. W.: Ultra-High Temperature Spraying. Prod. Finishing, **14**, (11) 98—100 (1961).
553. Shkliarevskii, E. E., and E. V. Smirnov: Udel'Noi Elektricheskoe Sprotivlenie Okisi Aliuminiia Nanesennoi Na Podlozhku Plazmennym I Gazoplamennym Napyleniem (Electrical Resistivity of Aluminum Oxide Deposited on a Substrate by Plasma and Gas-Flame Spraying). Inzhenerno-Fizicheskii Zhurnal, **6**, 713—716 (1969).
554. Shlyakova, K. S.: The Structure and Certain Properties of Gas-Flame Coatings. Translated by Joint Public Research Service, Report No. 16788, 1962.
555. Shoffner, J. E., E. E. Keller, and W. M. Sutherland: Materials Finishes and Coatings—Flame Sprayed—Alumina, Zirconia Tungsten Carbide. Rocket Blast Impingement Resistant. Report No. 8926-060, General Dynamics/Convair, 1958.
556. Simpson, H. G.: Evaluation of Protective Finishes for Highly Susceptible Stress Corrosion Areas. Lockhead-Georgia Co., Defense Documentation Center, AD-840 050 L, 1967.

557. Singleton, R. H., E. L. Bolin, and F. W. Carl: The Fabrication of Complicated Refractory Metal Shapes by Arc Spray Techniques. High-Temperature Materials, Part 2, Metallurgical Society Conferences, **18**, 641—654, Technical Conference Proceedings. Ed. by G. M. Ault, W. F. Barclay, H. P. Munger, New York: Inter-Science Publishers Div. John Wiley and Sons, Inc., 1963.
558. Singleton, R. H., E. L. Bolin, and F. W. Carl: Tungsten Fabrication by Arc Spraying. J. Metals, **13**, (7) 483—486 (1961).
559. Singleton, R. H., *et al.*: The Fabrication of Complicated Refractory Metal Shapes by Arc Spray Techniques. Western Metals Congress, March, 1961.
560. Sita, E. R.: Development of the Flame Sprayed Aluminum Concept for Conductive Cooling of XE Engine-Mounted Electrical Cables. NASA-CR-104090, National Aeronautics and Space Administration, 1967.
561. Sitzer, D. H.: Flame Sprayed Nickel Aluminide Coatings. Metal Progr., **86**, (9) 128 (1964).
562. Sklarew, S.: Marquardt Process Specification Number 512, Application of Rokide Coatings. Marquardt Aircraft Co., 1956.
563. Sklarew, S.: Emittance Studies of Various High-Temperature Materials and Coatings. Marquardt Corp., Defense Documentation Center, AD-299 417, 1963.
564. Smith, D. M.: Plasma Spraying of Refractory Materials. Gen. Motors Eng. J., 2nd Quarter, 1963.
565. Smith, H. E., and J. C. Wurst: The Evaluation of High-Temperature Materials Systems with an Arc-Plasma-Jet. Wright-Patterson Air Force Base, TDR-64-73, U.S. Air Force, 1964.
566. Smith, H. E.: Development and Investigation of an Arc-Plasma Material Evaluation Facility. Wright-Patterson Air Force Base, ASD-TDR-62-653, U.S. Air Force (No Date).
567. Smith, R. S., N. Stephenson, and T. A. Taylor: The Influence of Some Process Variables on the Adhesion of Aluminum Spray Coatings. National Gas Turbine Establishment Pyestock, England, Defense Documentation Center, AD-233 639, 1959.
568. Smith, R. S., and N. Stephenson: An Adhesion Test for Aluminum Spray-Coatings and Other Metallised Surfaces. National Gas Turbine Establishment, Pyestock, England, Defense Documentation Center, AD-233 638, 1959.
569. Smith, R. S., and N. Stephenson: The Response of Aluminum-Spray Coatings to Simulated Abnormal Service Variables. National Gas Turbine Establishment, Pyestock, England, Defense Documentation Center, AD-236 531, 1960.
570. Smoke, E. J., and C. J. Phillips: Inorganic Dielectrics Research. New Jersey Ceramic Research Station, Rutgers, Defense Documentation Center, AD-287 173, 1962, AD-287 167, 1960, AD-287 171, 1961.
571. Smoke, E. J., and D. R. Ulrich: Devitrified Barium Titanate Dielectrics. Amer. Ceram. Soc. J., **49**, (4) 210—215 (1966).
572. Spachner, S. A.: Liner for Extrusion Billet Containers. ASD, Wright-Patterson Air Force Base, TR-7-945-Pl, U.S. Air Force, 1962.
573. Spencer, D. J.: High Mach Number and Materials Research Program Phase II, Arc Plasma Investigations and Arc Tunnel Materials Studies. Wright-Patterson Air Force Base, TDR-594, U.S. Air Force, 1961.
574. Spitzig, W. A.: Sintering of Arc Plasma Sprayed Tungsten. M.S. Thesis, Case Institute Tech., 1962.
575. Stackhouse, R. D., *et al.*: Plasma-Arc Plating. Prod. Eng., **29**, (50) 104—106 (1958).
576. Starr, G. A.: Hydrofoil Materials Research Program. Ling-Temco-Vought, Inc., Defense Documentation Center, AD-464 356, 1964.
577. Steffens, H. D.: Der Lichtbogen-Metallspritzprozeß (The Arc Metal Spraying Process). Jahrbuch der Oberflächentechnik, 205—215, Berlin: Metall-Verlag, 1963.

578. Steffens, H. D.: The Bonding Mechanism in Metal Spraying. Report given at the Third International Metal Spraying Conf., Madrid, 1962.
579. Steffens, H., and M. Dittrich: Molybdän als Spritzwerkstoff (Molybdenum as Spray Materials). Schw. U. Schn., **15**, (3) 97—106 (1963).
580. Sterry, W. M.: Ceramic and Composite Ceramic-Metal Materials Systems Applicable to Re-entry Structures. Paper presented at the Society of Aircraft and Materials and Process Engineers Symposium, Dayton, Ohio, March, 1960.
581. Stetson, A. R., and C. A. Hauck: Plasma-Spraying Techniques for Toxic and Oxidizable Materials. J. Metals, **13**, (7) 479—482 (1961).
582. Stokes, C. S., and W. W. Knipe: The Plasma Jet in Chemicals Synthesis. Ind. Eng. Chem., **52**, 287—288 (1960.)
583. Strauss, E., and S. Seigle: Development of Composite Rocket Nozzles. TR-61-109-B, NOW-61-0479-C, U.S. Navy (No Date).
584. Stubbs, V. R.: Development of a Thermal Barrier Coating for Use on a Water-Loaded Nozzle of a Solid Propellant Rocket Motor. NASA-CR-72549, National Aeronautics and Space Administration, 1969.
585. Strubler, G. L.: Means for Applying Vitreous Enamel. U.S. Patent 2, 085, 278, 1937.
586. Strubler, G. L.: Method of Coating Articles with Glass. U.S. Patent 2, 356, 016, 1944.
587. Studt, T. B., A. E. King, A. J. Krause, and W. J. Shilling: 300 C Rotating Rectifier Alternator, Phase II—Design, Fabrication and Test of Alternator. Westinghouse Electric Corp., Ohio, Defense Documentation Center, AD-853-454, 1969.
588. Sully, A. H.: Special Coatings for Metals Used at High-Temperatures. Prod. Eng., **25**, (8) 135—141 (1954).
589. Sumner, E. V.: Study for AM-2 Mat Surfacing. Harvey Engineering Lab., Calif., Defense Documentation Center, AD-842-640-L, 1967.
590. Sunnen, J.: An Arc Device for the Application of Very High-Temperatures. Arcos, **38**, 47—54 (1961).
591. Sychrovsky, H.: Entwicklung der Gasturbinenwerkstoffe. M.T.Z., **16**, 202—205 (1955).
592. Teter, M. A.: Flame Plated Coatings. Mater. Methods., **43**, (2) 100—102 (1956).
593. Thompson, V. S.: Structural Changes on Reheating Plasma-Sprayed Alumina. Amer. Ceram. Soc. Bull., **47**, (7) 637—674 (1968).
594. Thompson, V. S.: Aluminum Flame Sprayed Coating Process for Reinforced Plastic Aircraft Assemblies. Welding J., **47**, (1) 31—36 (1968).
595. Thompson, V. S.: Evaluation of Flame Spray Mandrel Materials. MDR 2 24775 Boeing Co., Defense Documentation Center, AD-454 22, 1964.
596. Thompson, V. S.: Properties of Stainless Steel and Alumina Flame-Sprayed Free-Standing Shapes. MDR 2-24773, Boeing Co., Defense Documentation Center, AD-468 900, 1965.
597. Thorpe, M. L.: Plasma Flame Technology Handbook. Thermal Dynamic Corp., Bulletin 132, 1959.
598. Thorpe, M. L.: Plasma Arc Equipment. French Patent 1, 260, 262, 1960.
599. Thorpe, M. L.: The Plasma Jet and its Uses. Res. Develop., **11**, (1) 10 (1960).
600. Tiner, N. A.: Refractory Coatings for Aerospace Applications. Amer. Inst. of Chem. Eng. Annual Meeting, Symposium on Aerospace Materials No. 52, December, 1963.
601. Tolotta, S., and J. J. Agozzino: Development of a Flame-Sprayed Coating Technique for the Installation of Instrumentation on Naval Machinery Components. Naval Ship Engineering, Defense Documentation Center, AD-830-645-L, 1968.
602. Totten, J. K.: Ramjet Technology Program 1963, Section XVIII High-Temperature Coated Tungsten Structures. Marquardt Corp., Defense Documentation Center, AD-602 049, 1964.
603. Tour, S.: Modern Developments in Metallizing. Welding J., **31** (3) 109 (1952).

604. Tour, S.: Fused in Place Spray Metallized Coatings. Welding J., **34**, (4) 329 (1955).
605. Travitskaia, E. O.: Temperaturoustoichivye Zashchitnye Pokrytiia (Temperature-Stable Protective Coatings). Seminar Po Zharostoikim Pokrytiiam, 3rd Leningrad, U.S.S.R., 1966, Trudy, Izdatel Stvo Nauka, 1968.
606. Trias, J., F. M. Graber, and E. E. Keller: Materials-Finishes and Coatings-Aluminum Foil, Flame Sprayed Aluminum and Flame Sprayed Tin Reflecting Surfaces. Reflectant Characteristics. Report No. 8926-105, General Dynamics, Convair, Contract AF 33 (657)-8926, U.S. Air Force, 1960.
607. Tripp, H. P.: Development of Corrosion Resistant Coatings for Use at High-Temperatures. Gulton Ind., New Jersey, Defense Documentation Center, AD-691 850, 1960.
608. Trout, O. F.: Exploratory Investigation of Several Coated and Uncoated Metal, Refractory and Graphite Models in a 3,800° F Stagnation Temperature Air Jet. National Aeronautics Space Administration, Defense Documentation Center, AD-231 523 (No Date).
609. Tyler, P. M.: Plasma for Extractive Metallurgy. J. Met., **13**, (1) 51—54 (1961).
610. Umbaugh, C. W.: Development of Thin Organic Rolled Film Capacitor. Linde Div., Union Carbide Corp., Defense Documentation Center, AD-615 753, 1954.
611. Unger, R.: Arc Sprayed Gradated Coatings as Applied to the X-15 Thrust Chamber. S.A.M.P.E., National Meeting, November, 1961.
612. Unger, R., J. W. Rosenberry, and J. C. Wurst: Arc Sprayed Graduated Coatings as Applied to the X-15 Thrust Chamber, Part I, Application, Part II Testing. Presented to the S.A.M.P.E. Symposium on Ceramic and Composite Coatings and Solid Bodies, November, 1961.
613. Unger, R.: Composite Refractory Coatings. West Coast Regional Meeting, Amer. Ceram. Soc., October, 1960.
614. Unger, R.: Investigation of Nickel-Aluminum Oxide Coatings on Atlas Sustainer Chamber Serial No. ROO 3 R Type 200860. Rocketdyne Report CEM 01114-504, January, 1960.
615. Unger, R.: Testing of Ceramic Coated B-3 Type (Thor) Chamber, Serial No. 142. Rocketdyne Report CEM 914-677, August, 1959.
616. Vagi, J. J., *et al.*: Review of Recent Developments in Metals Joining. Defense Metals Information Center, Battelle Memorial Institute DMIC Memo., 125, 1961.
617. Vanderpool, H., and A. Shepard: Metallizing, Chapt. 10, Surface Protection Against Wear and Corrosion. Amer. Soc. Met., Metals Park, Ohio, 1954.
618. Vasilos, T., and G. Harris: Impervious Flame-Sprayed Ceramic Coatings. Amer. Ceram. Soc. Bull., **41**, (1) 14—17 (1962).
619. Venezky, D. L., A. G. Sands, and E. B. Simmons: Protective Coatings for Magnesium Alloys, Part I Effect on Mechanical Properties of a New Technique for Fusing Teflon to Magnesium and Aluminum Alloys. Naval Research Lab., -6209, U.S. Navy, 1965.
620. Venezky, D. L., A. G. Sands, and E. B. Simmons: Protective Coatings for Magnesium and Aluminum Alloys to Corrosion by 3% Sodium Chloride Solution. Naval Research Lab., -6353, U.S. Navy, 1965.
621. Vidanoff, R. B.: Silica Fiber Forming and Core-Sheath Composite Fiber Development. Whittaker Corp., Calif., Defense Documentation Center, AD-410 051, 1963.
622. Viglione, J.: Effect of Plasma Sprayed Metco 404 and 439 Coatings on the Fatigue Properties of 4340 Steel. Naval Air Development Center, MA-6923, U.S. Navy, 1969.
623. Vogan, J. W., and J. L. Trumbull: Metal-Ceramic Structural Composite Materials. Wright-Patterson Air Force Base, TDR-64-83, U.S. Air Force, 1964.
624. von Hofe, A.: Oberflächenbeschaffenheit und Haftfestigkeit von Flammspritzschichten (Surface Condition and Adhesive Strength of Flame Sprayed Layers). Ind.-Anz., **79**, (37) 542—543 (1957).

625. VON WHARTENBERG, H.: Zur Kenntnis der Tonerde. Z. Anorg. Allg. Chem., **269**, 76—85 (1952), **270**, 328 (1952).
626. VOSSEN, J. L., and R. E. WHITMORE: Plasma Anodized Lanthanium Titanite Films Used as Evaporable Thin Film Dielectric, Investigating Electric Properties. IEEE Trans. on Parts, Materials and Packaging, **PMP-1** (6) 105—155 (1965).
627. WADE, W. R., and W. S. SLEMP: Measurements of Total Emittance of Several Refractory Oxides, Cermets and Ceramics for Temperatures from 600° F to 2000° F. NASA TN D-998, National Aeronautics and Space Administration, 1962.
628. WALKER, D. L., and R. S. KIRBY: Process Variables in Plasma Spraying, Refractory Coatings on Beryllium. Lockheed Aircraft Corp., ATL-574, Contract NOrd 17017, U.S. Navy, 1967.
629. WALKER, D. R., and H. W. WYATT: Measuring Fracture of Ceramic Coatings. Mater. Design Eng., **48**, (2) (1958).
630. WALTON, J. D.: Experimental Application of Arc and Flame Sprayed Coatings. Technical Paper Presented at Aerospace Finishing Symposium Fort Worth, Texas, December, 1959.
631. WALTON, J. D., J. D. FLEMING, and N. E. POULOS: Investigation of High-Temperature Resistant Materials. Georgia Inst. of Tech. Defense Documentation Center, AD-222 920 (No Date).
632. WALZ, F. C.: Development of Film Type 2000 Degrees F Heaters. Wright-Patterson Air Force Base, ASD-TDR-62-662, U.S. Air Force, 1964.
633. WATKINS, L. L.: Corrosion and Protection of Steel Piling in Seawater. Army Coastal Engineering Research Center, Defense Documentation Center, AD-690 803, 1969.
634. WATSON, D. A.: Sprayed Metal Coatings in Product Design. Mater. Methods, **42**, (6) 106—109 (1955).
635. WATTS, A. A.: Development of High Strength Materials for Solid Rocket Motors. General Electric Co., Defense Documentation Center, AD-236 126, 1960.
636. WAXMAN, A. S., and K. H. ZAININGER: Radiation Resistance of Al_2O_3 MOS Devices. IEEE Transactions on Electron Devices, **ED-16**, (4) 333—338 (1969).
637. WAUGH, J. S., A. E. PALADINO, J. J. GREEN, and W. R. BEKEBREDE: Fine-Grain Dense Ferrites. Raytheon, Mass., Defense Documentation Center, AD-403 292, 1963.
638. WESTBROOK, A. H.: Metal Ceramic Composites. Amer. Ceram. Soc. Bull., **31**, (6) 205 to 208, 248—250 (1952).
639. WESTERHOLM, R. J., J. C. MCGEARY, R. L. WOLFF, and H. M. HUFF: Flame Sprayed Coatings. Machine Design., **33**, (18) 82—92 (1961).
640. WEYMOUTH, L. J.: Strain Gage Application by Flame Techniques. Instrument Society of America, 19th Annual Conf., New York, October, 1955.
641. WHEILDON, W. M.: Coating Metals and Other Materials with Oxide and Articles Made Thereby. U.S. Patent 2, 707, 691, 1955.
642. WHEILDON, W. M.: The Role of Flame Sprayed Ceramic Coatings as Materials for Space Technology and the Systems for Application. Presented at A.I.Ch. E. Meeting New Orleans, La., March, 1963.
643. WHEILDON, W. M.: Flame Sprayed Ceramic Coating, Survey and State of the Art. Presented at the Amer. Soc. for Testing Mater. June, 1966.
644. WHEILDON, W. M.: Oxide Coatings-Resistant to Temperatures in Excess of 3000° F and to Erosion of Supersonic Velocities. Pacific Coast Cer. News, **4**, (11) 21—25 (1955).
645. WHEILDON, W. M.: Wear Resistant Ceramic Tooling in the Fabrication of Ceramic Shapes. Amer. Ceram. Soc. Bull., **42**, (5) 308—311 (1963).
646. WHEILDON, W. M.: Flame-Sprayed Ceramic Coatings in Space Technology. Spaceflight, **9**, (2) 55—62 (1967).

647. Whittaker, J. A.: Corrosion Fatigue of High-Strength Aluminum Alloys as Affected by Notches, Anodic Metal Coatings, and Applied Cathodic Currents. Fulmer Research Institute Ltd., Defense Documentation Center, AD-415 264, 1963.
648. Whittaker, J. A.: Study of the Exfoliation Corrosion of Aluminum Alloys. Fulmer Research Institute Ltd., Defense Documentation Center, AD-245 779, 1960.
649. Whymark, R. R., and W. E. Lawrie: Ultrasonics and Ceramic Coatings. Wright-Patterson Air Force Base, ASD-TR-60-157, U.S. Air Force, 1960.
650. Wigg, L. D.: The Effect of Scale on Fine Sprays Produced by Large Air-Blast Atomizers. National Gas Turbine Establishment, Defense Documentation Center, AD-227 044, 1959.
651. Wilson, J. W.: Refractory Materials a Special Projects Office. Stanford Research Inst., Calif., Defense Documentation Center, AD-233 955, 1960.
652. Wilson, R. E.: Ceramic-Plastic Composites for Rain Erosion Resistant Radomes. Naval Ordnance Lab., NOLTR-65-63, U.S. Navy, 1965.
653. Wintermute, G.: Development of Manufacturing Techniques for Production of Rain Erosion Resistant Coated Structures. Goodyear Aerospace Corp., Arizona, Defense Documentation Center, AD-823 303, 1967.
654. Wlassow, A., and K. Swinkow: High Frequency Metal Spraying. Moscow: Maschgia Publishers, 1960.
655. Wlodek, S. T.: Coatings for Columbium. J. Electrochem. Soc., **108**, 177 (1961).
656. Wood, R. A.: Surface Treatment of Titanium. Defense Metals Information Center, Defense Documentation Center, AD-463 016, 1965.
657. Wurst, J. C.: The Evaluation of High-Temperature Materials, Part I: Evaluation of Coatings for Refractory Alloys, Part II: Materials Evaluation with an Arc-Plasma-Jet. Wright-Patterson Air Force Base, TDR-64-62, U.S. Air Force, 1964.
658. Wurst, J. C., J. A. Cherry, D. A. Gerdeman, and N. L. Hecht: The Evaluation of Materials Systems for High-Temperature Aerospace Applications. Wright-Patterson Air Force Base, AFML TR-65-339, Part I, U.S. Air Force, 1966.
659. Wurst, J. C., and J. A. Cherry: A Quarterly Progress Report on the Evaluation of High-Temperature Materials. University of Dayton, Contract AF 33 (616)-7838, U.S. Air Force, 1963.
660. Wurst, J., J. Cherry, and N. L. Hecht: The Evaluation of High-Temperature Materials. Research Institute University of Dayton, Defense Documentation Center, AD-478 564, 1964.
661. Yates, J.: Materials Property Data. Bendix Products Div. Task 73812, Contract AF 33(616)-8086, U.S. Air Force, 1961.
662. Yezerskiy, A. N.: Flame-Spraying of Plastics. Foreign Tech. Div., Wright-Patterson Air Force Base, Defense Documentation Center, AD-405 250 (No Date).
663. Zandstra, K. A.: Progress Review No. 58: Plasma Heating. J. Inst. Fuel, **38**, (297) 450—455 (1965).
664. Zilberberg, V. G.: Prochnost Stsepleniia Plazmennykh Pokrytii S Osnovoi. Poroshkovaia Met., **9**, 96—100 (1969).
665. Zoltowski, P.: Les Couches En Alumine Effectuées Au Pistolet A Plasma. Parte I, Rev. Inst. Hautes Temper et Refract. **t5**, 253—265 (1968), Parte II, Rev. Ind. Hautes Temper et Refract. **t6**, 65—70 (1969).
666. First Refractory Composite Working Group Meeting (1958) compiled by:
Roller, D.: Summary of the First High-Temperature Inorganic Refractory Coatings Meeting. Wright Air Development Center, WCLT-TM-58-139, U.S. Air Force, 1958.
667. Second Refractory Composite Working Group Meeting (1959) compiled by:
Roller, D.: Summary of Second High-Temperature Inorganic Refractory Coatings Working Group Meeting. WADT-TR-69-415 Wright Air Development Center, U.S. Air Force, 1959.

a. WALTON, J. D.: Arc Sprayed Coatings; pp. 7—8.
b. BRADSTREET, S. W.: Effects of Particle Chill Rate; p. 11.
c. INGHAM, H. S.: Evaluation Methods and Equipment for Flame Sprayed Coatings; pp. 15—28.
d. THORPE, M. L.: Plasma Jet Spraying; pp. 29—36.
e. HERRON, R. H.: Research at Bendix Aviation Corp.; pp. 41—43.
f. WHEILDON, W. M.: Rokide Flame Spraying; pp. 51—54.
g. GRINTHAL, R.: Rod Flame Spraying; pp. 58—59.
h. SKLAREW, S.: Flame Sprayed Ceramics; pp. 62—66.
i. LEVINSTEIN, M.: Columbium and Columbium Alloys; pp. 67—69.
j. SINGLETON, R. H.: Refractory Coating Research; pp. 71—74.
k. PENTECOST, J. L.: Coating Research; pp. 91—93.
l. OLCOTT, E. L.: Coatings for Rocket Motors; pp. 105—106.
m. LEEDS, D. H.: Flame Sprayed Coatings; pp. 107—108.
n. MOORE, D. G.: Flame Spraying; pp. 109—110.

668. The Fourth Composites Working Group Meeting, November, 1960, Preprints:
a. SMITH, G. D.: Heat Transfer Characteristics of Materials in Plasma Flames.
b. MASON, C. R., and J. D. WALTON: Thin Arc Sprayed Shapes II.
c. EISENLOHR, A.: The Role of Materials in Plasma Flame Spraying.
d. STERRY, W. M.: A Progress Report on Boeing Studies of Refractory Coatings, Metal-Ceramic Composites for Thermal Protection Systems.
e. WINTERSTEEN, R.: Sprayed Deposition with a Plasma-Therm.
f. WEARE, N. E.: Refractory Coating Research at Advanced Technology Laboratories.
g. SINGLETON, R. H.: Fabrication of Tungsten Shapes Using the Arc Plasma Spray Forming Technology.
h. BURNETT, P. L.: AVCO Plasma Spray Program.
i. LEVINSTEIN, M. A., and W. B. HALL: Properties of Plasma Materials.
j. GIANNINI: Plasmadyne Corp., A Survey: Contributions for the Establishment of Standard Materials Screening Tests for High-Temperature Materials Section.
k. THORPE, M. L.: Progress Report Plasma Generators and Associated Equipment.
l. TROSTEL, L. J.: Rokide Coating Development.

669. The Fifth Refractory Composite Working Group Meeting (1961), compiled by: HJELM, L. N.: in Summary of the Fifth Refractory Composites Working Grouping Meeting. Air Force Systems Command, ASD-TDR-63-96, U.S. Air Force, 1961.
a. UNGER, R.: Composite Plasma Depositions; No. 19.
b. MASH, D. R.: Refractory Coatings Research at Advanced Technology Laboratories; No. 25.
c. LEEDS, D. H.: Interface Bonding Studies and a New Plasma Arc Spray Gun, Accomplishment and Plans; No. 26.
d. ROSENBERRY, J. W., and J. C. WURST: High-Temperature Materials Evaluation; No. 27.
e. DAVIS, L. W.: Activities in the High-Temperature Inorganic Refractory Coating Field; No. 28.
f. MURPHY, C. A., N. E. POULOS, and J. D. WALTON: Thin Arc-Sprayed Shapes III; No. 30.
g. GRISAFFE, S. J.: A Preliminary Investigation of the Thermal Heating of Powder Particles During Plasma Spraying; No. 31.
h. JOHNSON, R. L., and W. M. WHEILDON: Development and Evaluation of a Rokide Plasma System; No. 32.
i. HILL, V. L.: Transition and Temperature and Flexural Strength of Tungsten Materials, Fabrication and Properties of Tungsten; No. 33.

j. LEVY, M.: Refractory Coating Research and Development Watertown Arsenal Laboratories; No. 35.
k. BLITON, J. L., and S. W. BRADSTREET: Pertinent Activities in Refractory Composites; No. 36.
l. JOHNSON, R. L.: Emittance Coatings for the Enhancement of Radiation Heat Transfer from Solids; No. 37.

670. The Sixth Refractory Composite Working Group Meeting (1962), compiled by: HJELM, L. N.: in Summary of the Sixth Refractory Composites Working Group Meeting. Volume I and II, Air Force Systems Command, ASD-TDR-63-610, U.S. Air Force, 1962.
a. STETSON, A. R.: Tungsten Wire Reinforces Plasma Arc Sprayed Tungsten; pp. 187—196.
b. BLITON, J. L.: Refractory Composites and Coatings; pp. 226—247.
c. BARTEL, E. H.: Aircraft Coatings for Rocket Blast; pp. 669—680.
d. AULT, N. N.: Optical Properties for Rokide Coatings; pp. 684—698.
e. MOLELLA, D. J.: Evaluation of Oxidation Resistant Coatings in a Water-Stabilized Electric Arc at Temperatures to 2325° C; pp. 749—777.
f. LEEDS, D. H.: Summary Observation of the Interface Between Plasma Sprayed Tungsten and 1020 Steel; pp. 778—787.
g. LOHRIE, B.: Economic Aspects of Arc Plasma Processing; pp. 788—793.
h. SMITH, B. D.: Microstructure of Selected Sprayed Coatings on Unalloyed Columbium; pp. 794—800.
i. GRISAFFE, S. J.: Practical Plasma Spraying; pp. 801—805.
j. INGHAM, H. S.: Evaluation Methods for Flame Spray Coatings; pp. 806—827.
k. UNGER, R.: Plasma Fusion Surfacing; pp. 828—840.
l. JENSON, G. A., and P. L. BURNETT: Some Effects of Tungsten Powders on Plasma Sprayed and Sintered Structure; pp. 841—850.

671. The Seventh Refractory Composite Working Group Meeting (1963), compiled by: HJELM, L. N., and D. R. JAMES: in Summary of the Seventh Refractory Composites Working Group Meeting. Volumes I, II, III, Air Force Systems Command, RTD-TDR-63-4131, U.S. Air Force, 1963.
a. BLITON, J. L.: Plasma-Sprayed Oxide and Vapor-Deposited Nitride Coatings on Tungsten as a Means of Achieving Oxidation Protection; pp. 203—208.
b. GRISAFFE, S. J., and W. A. SPITZIG: Observations on Metallurgical Bonding Between Plasma Sprayed Tungsten and Hot Tungsten Substrates; pp. 209—226.
c. LEEDS, D. H.: A Portfolio of Experience in Refractory Metal Protective Systems Bibliography; pp. 442—449.
d. LEVY, L.: Refractory Coating Research and Developments at U.S. Army Materials Research Agency; pp. 450—467.
e. BRAMER, S. E.: Plasma Arc Sprayed Free Standing Shapes for Radiation-Cooled Thrust Chambers; pp. 607—623.
f. EISENLOHR, A.: Arc Plasma Sprayed Tungsten as an Engineering Materials; pp. 632—638.
g. HEADMAN, W.: Report to Refractory Composites Working Group; pp. 763—781.
h. TINER, N. A.: Plasma Arc Spraying For Use in Radiating Rocket Chamber; pp. 782—802.
i. INGHAM, H. S., and F. N. LONGO: New Technique for Plasma Spraying Tungsten; pp. 803—810.
j. LUSHER, G. H., and W. M. WHEILDON: Development of Heat Generating Systems for Rokide Flame-Spraying; pp. 908—915.

672. Eighth Refractory Composites Working Group Meeting (1964), compiled by: JAMES, D. R., and L. N. HJELM: in Summary of the Eighth Refractory Composites

Working Group Meeting. Volumes I, II, III, Air Force System Command, ML-TDR-64-233, U.S. Air Force, 1964.

a. Bliton, J. L.: Refractory Composite and Coating Work Conducted at IIT Research Institute; pp. 660—679.
b. Tiner, N. A.: Refractory Coatings by Plasma Spraying for Aerospace Applications; pp. 674—707.
c. Davis, L. W.: Activities in the High-Temperature Inorganic Refractory Coatings Field; pp. 708—715.
d. Bruckart, W. L., and S. E. Bramer: Plasma Arc Sprayed Thrust Chamber Development and Testing; pp. 716—766.
e. Grisaffe, S. J., and W. A. Spitzig: On Plasma Sprayed Diffusion Bonding Between Tungsten and Cool Stainless Steel Substrates; pp. 767—774.
f. Wheildon, W. M.: Study of Stabilized Methylacetylene-Propadiene as a Fuel Gas for the Rokide Process; pp. 775—785.
g. Headman, M. L.: Progress Report on Plasma Sprayed Refractory Materials; pp. 786—797.
h. Harris, G. M., and P. L. Burnett: Recent Developments at AVCO RAD in the Refractory Composites Field; pp. 798—808.
i. Rosenberry, J. W.: Recent Progress in Plasma Arc Spraying and Environmental Simulation at Giannini Scientific Corp.; pp. 809—834.

673. Ninth Refractory Composite Working Group Meeting (1965), compiled by: Hjelm, L. N., D. James, and E. Beardsley: in Summary of the Ninth Refractory Composites Working Group Meeting. Air Force Systems Command, AFML-TR-64-398, U.S. Air Force, 1965.

a. Beaver, W. W., and R. M. Paine: Summary of Activities in the Area of Refractory Composites; pp. 327—352.
b. Unger, R.: Plasma Jet Operations; pp. 617—639.
c. Bortz, S. A.: Four Short Review Sections from Two Current Major Programs at IIT RI; pp. 825—861.
d. Browning, M. E., *et al.*: Activities Report on High-Temperature Materials and Coatings Work at AMF; pp. 938—967.
e. Ingham, H. S.: Some Advances in Combustion and Plasma Flame Spray Coatings; pp. 968—977.

674. Tenth Refractory Composite Working Group Meeting (1965), compiled by: Hjelm, L. N., D. R. James, and E. H. Beardsley: in Summary of the Tenth Refractory Working Group Meeting. Air Force Systems Command, AFML-TR-65-207, U.S. Air Force, 1965.

a. Ingham, H. S., and F. N. Longo: Flame Sprayed Molybdenum; pp. 161—169.
b. Grisaffe, S. J.: Shear Bond Strength of Aluminum Coatings; pp. 336—341.
c. Wheildon, W. M.: Status of Rokide Coating System and Summary of Hot Pressing Capabilities; pp. 342—353.
d. Bortz, S. A.: A Review of Current Refractory Composite Research in Ceramics at IIT RI; pp. 774—817.

675. Eleventh Refractory Composite Working Group Meeting (1966), compiled by: James, D. R., and E. H. Beardsley: in Summary of the Eleventh Refractory Composites Working Group Meeting. Air Force Systems Command, AFML-TR-66-179, U.S. Air Force, 1966.

a. Chao, P. J.: Composite Materials Development at Wright-Aeronautical Division; pp. 475—487.
b. Bortz, S. A.: A Review of Current Refractory Composite Research in Ceramics; pp. 1119—1156.

676. Twelfth Refractory Composite Working Group Meeting (1967), compiled by: JAMES, D. R., and E. H. BEARDSLEY: in Summary of the Twelfth Refractory Composites Working Group Meeting. Air Force Systems Command, AFML-TR-67-228, U.S. Air Force, 1967.
   a. WHEILDON, W. M.: An Experimental Abrasion Test System and Summary of Results; pp. 385—390.
   b. INGHAM, H. S.: A New Bond Test for Coatings; pp. 391—403.
677. Thirteenth Refractory Composites Working Group Meeting (1968), compiled by: BEARDSLEY, E. H.: in Summary of the Thirteenth Refractory Composites Working Group Meeting. Air Force Systems Command, AFML-TR-68-84, U.S. Air Force, 1968.
   a. KENSHOL, K. W.: High-Temperature Protective Coatings on Extrusion Dies; pp. 346—352.
   b. WHEILDON, W. M.: Properties of Thermal Sprayed Zirconate Coatings; pp. 353—361.
   c. CARPENTER, H. W.: Heat Barrier for Advanced Rocket Engines and High-Temperature Insulation Systems; pp. 390—386.
   d. WURST, J. C.: Refractory Composite Evaluation at the University of Dayton Research Institute; pp. 362—379.
678. Fourteenth Refractory Composites Working Group Meeting (1968), compiled by: PURCELL, G. V., and J. P. BOYER: in 14th Refractory Composites Working Group Meeting. Air Force Systems Command, AFML-TR-68-129, U.S. Air Force, 1968.
679. Fifteenth Refractory Composites Working Group Meeting (1969), compiled by: MAYKUTH, D. J., and K. R. HANBY: in Summary of the Fifteenth Refractory Composites Working Group Meeting. DMIC Report S-26, Defense Metals Information Center, 1969.
   a. BUCKLEY, J. D.: Preliminary Investigation of the Thermal Stress and Insulation Properties of Stabilized Zirconia and Cermet Coatings on Thin-Gage Refractory Alloy Sheet Metal; pp. 5—6.
   b. HEESTAND, R. L., *et al.*: Recent Developments in Plasma Spray Studies at Battelle-Columbus; pp. 15—16.
680. Sixteenth Refractory Composite Working Group Meeting (1969), compiled by: HANBY, K. R., and D. J. MAYKUTH: in Summary of the Sixteenth Refractory Composites Working Group Meeting. DMIC Report S-30, Defense Metals Information Center, 1969.
   a. DITTRICH, F. J., and H. S. INGHAM: Thermal Shock Resistance of Plasma Sprayed Zirconia Coatings; p. 1.
681. Seventeenth Refractory Composites Working Group Meeting, June, 1970, Preprints:
   a. HECHT, N. L.: Refractory Coatings Development at University of Dayton Research Institute.
   b. RANSONE, P. O., and I. O. MACCONOCHIE: Summary Review of Integrated Thermal Protection Systems for Space Shuttle.
   c. GRISAFFE, S. J.: Review of Some Current NASA-Lewis Sponsored Coating Research.
   d. JONES, M. S.: Advances in Plasma Spray Coatings for High-Temperature.
   e. TUCKER, R. C.: Plasma-Deposited FeCrAlY Coatings.

Section II

Plasma Testing Literature

1. ADAMS, E. W.: Analysis of Quartz and Teflon Shields for a Particular Reentry Mission. Proceedings of 1961 Heat Transfer and Fluid Mech. Inst. Pasadena, California, June, 1961.

2. Ahouse, D. R., and P. J. Harbour: The Flow Upstream of a Blunt Body in Hypersonic Flow from Continuum to Nearly Free Molecule Conditions. Book of Abstracts, **1**, Sixth International Symposium on Rarefied Gas Dynamics, 1968.
3. Allen, H. J., and A. J. Eggers, Jr.: A Study of the Motion and Aerodynamic Heating of Ballistic Missiles Entering the Earth's Atmosphere at High Supersonic Speeds. NACA Report 1381, National Committee for Aeronautics, 1958.
4. Alpher, R. A., and D. R. White: Optical Refractivity of High-Temperature Gases, **I**, Effects Resulting from Dissociation of Diatomic Gases, Phys. Fluids, March-April, 1959.
5. Anderson, L. A., and R. E. Sheldahl: Flow-Swallowing Enthalpy Probes in Low-Density Plasma Streams. AIAA Paper No. 68-390, April, 1968.
6. Anonymous: Air Arc Test Facilities of the Space Sciences Laboratory. General Electric SSL Report 4, April, 1961.
7. Anonymous: Plastic Thermocouple. Tech. Bull. 161, Nanmac Corporation, Indian Head, Maryland (No Date).
8. Anonymous: Wave Superheater Hypersonic Tunnel. Cornell Aeronautical Laboratory Report, December, 1960.
9. Anthony, F., and A. Mistretta: Investigation of Feasibility of Utilizing Available Heat Resistant Materials for Hypersonic Leading Edge Applications. ASD-TR-59-744, U.S. Air Force, 1961.
10. Ard, W. B.: Electron Temperature Measurements Above 100,000° K Using Radiation at the Electron Cyclotron Frequency. Paper No. 67, Temperature, Its Measurement and Control in Science and Industry, **3**, Part 1, Fourth Symposium, New York: Reinhold Publishing Company, 1962.
11. Ashkenas, H.: On Rotational Temperature Measurements in Electron-Beam Excited Nitrogen. Phys. Fluids, **10**, 2509 (1967).
12. Aversen, John C.: Effectiveness of Solar Radiation Shields for Thermal Control of Space Vehicles Subjected to Large Changes in Solar Energy. NASA Washington Symposium on Thermal Radiation of Solids, and National Aeronautics and Space Administration, 1965.
13. Barkan, P., and A. Whitman: An Uncooled, Rapid Response Probe for Measuring Stagnation Pressures in High Velocity Arc Plasma. ARL-64-192, U.S. Air Force, 1962.
14. Barr, R., R. R. Boedeker, R. M. Delaney, P. D. Doherty, D. J. Manson, and A. H. Weber: Temperature Measurements in High-Temperature Gases Using Thermal Neutron Scattering. Bull. Amer. Phys. Soc., **6** (1961).
15. Barriault, R. S., and J. Yos: Analysis of the Ablation of Plastic Heat Shields that Form a Charred Surface Layer. J. Amer. Rocket Soc., **30**, No. 9 (1960).
16. Batchelor, J.: Behavior of Nozzle Materials Under Extreme Rocket Motor Environment. QPR No. 2, Atlantic Research Corp., December, 1965.
17. Batchelor, J., N. Vasileff, S. McCormick, and E. Olcott: Development and Evaluation of Solid Propellant Rocket Motor Case Insulating Materials Systems. WADD TR-60-109 Part I, U.S. Air Force, 1960.
18. Batchelor, J., N. Vassileff, S. McCormick, and E. Olcott: Insulation Materials for Solid Propellant Rocket Motors. WADD TR-60-109, Part 2, U.S. Air Force, 1961.
19. Beckwith, E., and N. B. Cohen: Application of Similar Solutions to Calculation of Laminar Heat Transfer on Bodies with Yaw and Large Pressure Gradient in High Speed Flow. NASA TN D-625, National Aeronautics and Space Administration, 1961.
20. Bethe, H. A., and Mac C. Adams: A Theory for the Ablation of Glassy Materials. J. Aerospace Sci., **26**, June (1959).
21. Biekowski, G. K., and P. J. Harbour: Structure of Electron-Beam Generated Plasma. Presented at Rarefied Gas Dynamics, Sixth Symposium, 1968.

22. Blackshear, P. J., and F. D. Dorman: Heat-Sensing Probe and Process. U.S. Patent No. 3, 296, 865, (Diluent Probe), January 10, 1967.
23. Blackshear, P. J.: Sonic Flow Orifice Temperature Probe for High Gas Temperature Measurements. NACA TN 2167, National Advisory Committee for Aeronautics, 1950.
24. Blythe, P. A.: Nonequilibrium Flow Through a Nozzle. Fluid Mech. Papers, **17** (1963).
25. Boatright, W. B., D. I. Sebacher, and R. W. Guy: Review of Testing Techniques and Flow Calibration Results for Hypersonic Arc Tunnels. AIAA Paper No. 68-379, April, 1968.
26. Boatright, W. B., R. B. Stewart, and D. I. Sebacher: Testing Experience and Calibration Experiments in a Mach Number 12, 1-Foot Hypersonic Arc Tunnel. Presented at Third Hypervelocity Techniques Symposium, Denver, Colo., March, 1964.
27. Bogdan, L., and K. C. Hendershot: Density and Temperature Measurements in the Base Region of a Clustered Rocket Model Using an Electron Beam. Presented at Second International Congress on Instrumentation in Aerospace Simulation Facilities, August, 1966.
28. Bohm, D.: Minimum Ionic Kinetic Energy for a Stable Sheath. The Characteristics of Electrical Discharges in Magnetic Fields, New York: McGraw-Hill Book Co., 1949.
29. Bond, A., B. Rashins, and R. Levin: Experimental Ablation Cooling. NACA Res. Memo. L 58 E 15a, National Advisory Committee for Aeronautics, 15 July, 1958.
30. Bonin, J., and C. Price: Thermal Protection of Structural, Propulsion, Temperature Sensitive Materials for Hypersonic and Space Flight. WADC TR-59-366, Part 1, U.S. Air Force, 1959.
31. Bonin, J., C. Price, and D. Taylor: Determination of Factors Governing Selection and Application of Materials for Ablation Cooling of Hypervelocity Vehicles. WADC TR 59-87, Part 1, U.S. Air Force, 1959.
32. Bowers, D. A.: Leading Edges Development-Dyna Soar. D 2 80085, The Boeing Co., June, 1963.
33. Boyer, A. G., and E. P. Muntz: Experimental Studies of Turbulence Characteristics in the Hypersonic Wake of a Sharp Slender Cone. The Fluid Physics of Hypersonic Wakes, AGARD CP No. 14, May, 1967.
34. Bratt, L., and D. Chamberlain: High-Temperature Synthesis of New, Thermally Stable Chemical Compounds. ASD TR-59-345, U.S. Air Force, 1959.
35. Brocklehurst, R. E.: High Intensity Gamma Ray Dosimetry. ASTM Special Technical Publication, American Society for Testing and Materials, 1960.
36. Broding, W. C., F. W. Diederich, and P. S. Parker: Structural Optimization and Design Based on a Reliability Design Criterion. Presented at AIAA Shell Conference, Palm Springs, California, April, 1963.
37. Broding, W. C., T. R. Munson, and R. H. Watson: Aerothermal Structural Analysis of Carbonaceous Heat Shield Materials. RAD-RM-64-38, July, 1964.
38. Brogan, T.: The Electric Arc Wind Tunnel A Tool for Atmospheric Re-entry Research. J. Amer. Rocket Soc., **29**, 648 (1958).
39. Brogan, T. R.: Electric Arc Gas Heaters for Re-entry Simulation and Space Propulsion. AVCO-Everett Research, Rept. No. 35, 1958.
40. Brown, J. D., and F. A. Shukis: An Approximate Method for Design of Thermal Protection Systems. AVCO RAD TM-62-3. Presented at IAS 30th Annual Meeting in New York, January 21, 1962.
41. Brown, S. C., G. Bekefi, and R. E. Whitney: Infrared Interferometer for the Measurement of High Electron Densities. J. Opt. Soc. Amer., **53** (1963).
42. Brundin, C. L., and L. Talbot: The Application of Langmuir Probes to Flowing Ionized Gases. AGARD Report 478, September, 1964.

43. Budnick, L., H. Halle, and C. Price: Performance Characteristics of High-Temperature Materials Exposed to Reentry Conditions Simulated by an Air-Stabilized Arc. WADD TR 61-81, Part 1, U.S. Air Force, 1961.
44. Buhler, R., and D. Christensen: Arc Jet Measurements Related to Ablation Test Validity. ASTM Special Tech. Publ. 279, p. 107, Reinforced Plastics for Rockets and Aircraft, American Society for Testing and Materials, 1959.
45. Buhler, R., D. Christensen, and S. Grindle: Effects of Hyperthermal Conditions on Plastics Ablation Materials. ASD-TR-61-304, U.S. Air Force, 1961.
46. Bundy, and Strong: Physical Measurements in Gas Dynamics and Combustion. Princeton Series in High-Speed Aerodynamics, 1956.
47. Butefisch, K.: Investigation of Hypersonic Non-Equilibrium Rarefied Gas Flow Around a Circular Cylinder by the Electron Beam Technique. Presented at Rarefied Gas Dynamics Sixth Symposium, 1968.
48. Butler, C.: Image Furnace Research. International Symposium on High-Temperature Technology, New York, McGraw-Hill Publishing Company, 1959.
49. Butz, J.: Growth Potential Defined for Heat Sink, Ablation Shields. Aviation Week Space Tech., **71**, 69 (1959).
50. Byron, S., and R. M. Spongberg: Gasdynamic Instrumentation of High Enthalpy Flows. IEEE Transactions on Nuclear Science, NS-11, January, 1964.
51. Camac, M.: Flow Field Measurements with an Electron Beam. AIAA Paper 68-7222, 1968.
52. Cann, C. L., J. M. Teem, R. Buhler, and L. K. Branson: Magnetogasdynamic Accelerator Techniques. AEDC-TDR-62-145, U.S. Government, July, 1962.
53. Carden, W. H.: Heat Transfer in Non-Equilibrium-Dissociated Hypersonic Flow with Surface Catalysis and Second-Order Effects. AIAA Journal, **4**, October, 1966.
54. Carnevale, E. H., H. L. Poss, and J. M. Yos: Ultrasonic Temperature Determinations in a Plasma. Paper 89, Temperature, Its Measurement and Control in Science and Industry, **2**, Part 2, New York: Reinhold Publishing, 1962.
55. Carslaw, H. S., and J. C. Jaeger: Conduction of Heat in Solids. Oxford University Press, 1959.
56. Carswell, A. I., M. P. Bachynski, and G. G. Clouszier: Microwave Measurements of Electromagnetic Properties of Plasma-Flow Fields. AIAA Paper 63-385, 1963.
57. Cason, C. M., and T. A. Barr: The Argma Plasma-Jet Facility. AD-263-470, U.S. Army, 1960.
58. Center, R. E.: Measurement of Shock Wave Structure in Helium-Argon Mixtures. Phys. Fluids, **10**, 1777 (1967).
59. Chen, C. J.: Velocity Surveys in Arc-Jet Tunnel Using Micron Size Tracer Particles. Santa Ana, Calif., Plasmadyne Corporation (No Date).
60. Cheng, D. Y., and P. L. Blackshear: Factors Influencing the Performance of a Fast-Response, Transpiration-Cooled, High-Temperature Probe. AIAA Paper No. 65-359, July, 1965.
61. Christensen, D., and R. Buhler: Arc-Jet Tunnel Development and Calibration for Parabolic Re-Entry Simulation. Final Summary Report IFR O 11-1872 on Contract DA-04-495-506-ORD-1872, Santa Ana, Calif., Plasmadyne Corp., 1961.
62. Cobine, J. D., and E. E. Burger: Ionization Gauge for Transient Gas Pressures. Rev. Sci. Instr., **32**, No. 6 (1961).
63. Coffman, J., G. Kibler, T. Riethof, and A. Watts: Carbonization of Plastics and Refractory Materials Research. WADD TR-60-646, Part 1, U.S. Air Force, 1961.
64. Cohen, I. M.: Asymptotic Theory of Spherical Electrostatic Probes in a Slightly-Ionized, Collision-Dominated Gas. Phys. Fluids, **6**, 1492—1499 1963.
65. Colburn, A. P.: A Method of Correlating Forced Convection Heat Transfer and a Comparison with Fluid Friction. Transactions of the AIChE, **29** (1933).,

66. Cookson, T. S., P. G. Dunham, and J. K. Kilham: Stagnation Point Heat Flow Meter Instr., **42**, April (1965).
67. Cooper, L. Y.: On the Magnetically Driven T-Type Shock Tube of Rectangular Geometry. AFCRL-687, U.S. Air Force, 1961.
68. Coote, M.: A Preliminary Design Method for Estimating the Drag of Cones. AVCO RAD Report L 343-MAC-58, 1958.
69. Cordero, J., F. W. Diederich, and H. Hurwicz: Aerothermodynamic Test Techniques for Re-Entry Structures and Materials. Aerospace Eng. **22**, January (1963).
70. Corrain, S.: Extended Applications of the Hot Wire Anemometer. NACA TN 1864, National Advisory Committee for Aeronautics, 1949.
71. Coudeville, H., I. I. Viviand, M. Raffin, and E. A. Brun: An Experimental Study of Wakes of Cylinders at Mach 20 in Rarefied Gas Flows. Book of Abstracts, **I**, Sixth International Symposium on Rarefied Gas Dynamics, 1968.
72. Crabou, R., C. Pannabecker, A. Plate, and R. Rice: The Determination of Hypersonic Drag Coefficients for Cones and Spheres. RAD TM-65-32, 1965.
73. Crites, R. C., and P. Czysz: Inlet and Test Section Diagnostics Using a Miniature Mass Flow Probe in Hypersonic Impulse Tunnel. AIAA Paper No. 68-389, April, 1968.
74. Cunningham, J. W., C. H. Fisher, and L. L. Price: Density and Temperature in Wind Tunnels Using Electron Beams. IEEE Transactions on Aerospace and Electronic Systems, **2**, 269 (1967).
75. Davis, R. M., and C. Milewski: High-Temperature Composite Structure. ASD TDR-62-418, U.S. Air Force, 1962.
76. De Leeuw, J. H.: Electrostatic Plasma Probes. AIAA Paper No. 63-370, Fifth Biennial Gas Dynamics Symposium, August 14—16, 1963.
77. Demetriades, A., and E. L. Doughman: Langmuir Probe Diagnosis of Turbulent Plasmas. AIAA Journal, **4** (1966).
78. Demetriades, A., and E. L. Doughman: Langmuir-Probe-Measurement Method for Turbulent Plasmas. Phys. Fluids, **8** (1965).
79. Diaconis, N., J. Fanucci, and G. Sutton: The Heat Protection Potential of Several Ablation Materials for Satellite and Ballistic Re-Entry into the Earth's Atmosphere. Planetary Space Sci., **4**, 463 (1963).
80. Dickerman, P. J.: Optical Spectrometric Measurements of High-Temperatures. University of Chicago, 1961.
81. Diederich, F. W., W. C. Broding, A. S. Hanawalt, and R. Siruall: Reliability as a Thermostructural Design Criterion. Transactions of 7th Symposium on Ballistic Missile and Space Technology, Air Force Academy, August, 1962.
82. Dieke, G. H.: Spectroscopy of Combustion. In Physical Measurements in Gas Dynamics and Combustion, Princeton Series in High Speed Aerodynamics, **IX** (1959).
83. Dimmock, T. H.: Influence of Ions on Rocket Combustion. AFOSR-63 Final Report on Project (42205) 204, U.S. Air Force, 1963.
84. Dormer, G., B. Payne, and E. Pike: Manufacturing Methods for High-Temperature Coating Of Large Molybdenum Parts. AFML TR-65-28, U.S. Air Force, 1965.
85. Dougal, A., and R. Gribble: Research on Plasma Diagnostic Methods for High-Temperature Plasma Research. ARL 65-270, U.S. Air Force, 1965.
86. Doyle, C.: Evaluation of Experimental Polymers. WADC TR-59-136, U.S. Air Force, 1959.
87. East, L. F.: Measurement of Skin Friction at Low Subsonic Speeds by the Razor Blade Technique. ARC-R & M-3525, Aeronautical Research Council, 1968.
88. Eckert, E. R. G.: Engineering Relations for Heat Transfer and Friction in High Velocity Laminar and Turbulent Boundary Layer Flow over Surfaces with Constant Pressure and Temperature. ASME Paper No. 55-A-31, 1955.

89. Edmonson, R. B., W. R. Thompson, and A. L. Hines: Thermodynamic Temperature Probe. Am. Rocket Soc. Preprint No. 1431-60, December, 1960.
90. Epstein, G., and H. King: Plastics for Rocket Motor Nozzles. Ind. Eng. Chem., **9** (1960).
91. Epstein, G., and J. Wilson: Reinforced Plastics for Rocket Motor Applications. S. P. E. Journal, **6** (1959).
92. Esker, D. W.: A Probe for Total-Enthalpy Measurements in Arc-Jet Exhausts. AIAA Journal, **5**, August (1967).
93. Fay, J. A., and N. H. Kemp: Theory of Stagnation-Point Heat Transfer in a Partially Ionized Diatomic Gas. Presented at IAS Annual Meeting, New York, January 21—23, 1963.
94. Fay, J. A., and F. R. Riddell: Theory of Stagnation-Point Heat Transfer in Dissociated Air. J. Aerospace Sci., **25**, February (1968).
95. Fingerson, L. M.: Research on The Development and Evaluation of a Two-Sensor Enthalpy Probe. Report No. ARL 64-161, U.S. Air Force, 1964.
96. Fingerson, L. M., and P. L. Blackshear: Characteristics of Heat-Flux Probe for Use in High-Temperatures Atmospheres. International Developments in Heat Transfer, Part IV, 1961.
97. Fingerson, L. M., and P. L. Blackshear: Some New Measuring Techniques in High-Temperature Gases. Combustion Lab., Univ. of Minnesota, Tech. Rep. 61-3, 1961.
98. Fiok, E. F. and A. I. Dahl: The Measurement of Gas Temperatures by Immersion-Type Instruments. J. Amer. Rocket Soc., **23**, No. 3 (1953).
99. Fischer, H., and L. C. Mansur: Conference on Extremely High-Temperatures. New York: John Wiley and Sons, 1958.
100. Fledderman, R. G., and H. Hurwicz: Analysis of Transient Ablation and Heat Conduction Phenomena at a Vaporizing Surface. Chemical Engineering Symposium Series, **57**, 24 (1960).
101. Flock, J. L., and R. R. Heck: Operational Experiences and Preliminary Results of Total Enthalpy Probe Measurements in the AFFDL 50-Megawatt Electrogasdynamics Facility. USAF Report No. FDM-TM-68-2, U.S. Air Force, 1968.
102. Fontijn, A., D. E. Rosner, and S. C. Kurzius: Chemical Scavenger Probe Studies of Atom and Excited Molecule Reactivity in Active Nitrogen from a Supersonic Stream. Can. J. Chem., **42** (1964).
103. Forbes, S. G., S. C. Slattery, and R. F. Kemp: Beam Diagnostic Studies. Presented at USAF-NASA Joint Meeting on Electrostatic Propulsion, April 24—26, 1961.
104. Freeman, M. P.: Plasma Jet Diagnosis Utilizing the Ablating Probe. Temperature — Its Measurement and Control in Science and Industry, **3**, New York: Reinhold Publishing Corp., 1962.
105. French, J. B.: Langmuir Probes in a Flowing Low-Density Plasma. Institute of Aerophysics, UTIA Report No. 79, Univ. of Toronto, August, 1961.
106. Fruchtman, I.: Temperature Measurement of Hot Gas Stream. AIAA Journal, **I**, August, 1963.
107. Gadamer, E. O.: Measurement of the Density Distribution in a Rarefied Gas Flow Using the Fluorescence Induced by a Thin Electron Beam. UTIA Report 83, AFOSR TN 60-500, U.S. Government, 1962.
108. Garstang, R. H.: Forbidden Transitions in Atomic and Molecular Processes. Edited by D. R. Bates, Academic Press, 1962.
109. Gaydon, A. G., and H. G. Wolfhard: Flames, Their Structure, Radiation, and Temperature. Chapman and Hall Ltd., 1953.
110. Gayeley, C.: Theoretical Evaluations of the Turbulent Skin Friction Coefficient and Heat Transfer on a Cone in Supersonic Flight. Report No. R 49 A 052, U.S. Army, 1949.

111. Georgiev, S., H. Hidalgo, and M. Adams: On Ablation for the Recovery of Satellites. Heat Transfer and Fluid Mechanics Institute Papers, p. 171, Stanford University Press, 1959.
112. Glaser, P.: Imaging Furnace Developments for High-Temperature Research. Presented at Electrochemical Society Meeting, Philadelphia, Pa., May, 1959.
113. Glass, I. I., and J. G. Hall: Handbook of Supersonic Aerodynamics. **18**, NAVORD Rept. 1488, **6**, U.S. Government Printing Office, Section 7, 1959.
114. Gordon, G. M., and D. A. Brown: Tungsten and Rocket Motors. Stanford Research Inst. (No Date.)
115. Grabow, R.: Mass Loss Calculations for Trajectory Analysis. AVCO/RAD-TR-63-154, 1963.
116. Grabow, R., and P. Lynch: Preliminary Design Curves of Aerodynamic Heating and Skin Friction for Conical Reentry Vehicles. AVCO/RAD-TR-64-79, 1964.
117. Greenshields, D. H.: Spectrographic Temperature Measurements in Carbon-Arc-Powered Air Jet. NASA TN D-169, National Aeronautical and Space Administration, 1959.
118. Grey, J.: Cooled Probe Diagnostics of Dense Plasma Mixing and Heat Transfer Processes. AIChE, Preprint 9C, November, 1967.
119. Grey, J.: Enthalpy Probes for Arc Plasmas-First Status Review. Report to Section 3, Subcommittee VI, Committee E-21, ASTM, April 12, 1966.
120. Grey, J.: Enthalpy Probes for Arc Plasmas-Second Status Review. Report to Section 3, Subcommittee VI, Committee E-21, ASTM, Toronto, Canada, May 3, 1967.
121. Grey, J.: Sensitivity Analysis for the Calorimetric Probe. Rev. Sci. Instr., **34**, August (1963).
122. Grey, J.: Thermodynamic Methods of High-Temperature Measurement. ISA Transactions, **4**, April (1965).
123. Grey, J., and P. F. Jacobs: A Calorimetric Probe for the Measurement of High Gas Temperatures. AEL Rept. No. 602, Princeton Univ., April, 1962.
124. Grey, J., and P. F. Jacobs: Cooled Electrostatic Probe. AIAA Journal, **5**, January (1967).
125. Grey, J., and P. F. Jacobs: Experiments on Turbulent Mixing in a Partially Ionized Gas. AIAA Journal, **2**, March (1964).
126. Grey, J., and F. Sherman: Calorimetric Probe for the Measurement of Extremely High-Temperatures. Rev. Sci. Instr., **33**, July (1962).
127. Grey, J., M. P. Sherman, and P. F. Jacobs: A Collimated Total Radiation Probe for Arc Jet Measurements. IEEE Transactions on Nuclear Science, **NS-11**, January (1964).
128. Grey, J., M. P. Sherman, P. M. Williams, and D. B. Fradkin: Laminar Arc Jet Mixing and Heat Transfer: Theory and Experiments. AIAA Journal, **4**, June (1966).
129. Griem, H. R.: Plasma Spectroscopy. Paper for the Fifth International Conference on Ionization Phenomena in Gases, **II**, Munich, 1961.
130. Gross, J. J., D. J. Masson, and C. Gazley, Jr.: General Characteristics of Binary Boundary Layer with Applications to Sublimation Cooling. Rand Rep. P-1371, May 8, 1958.
131. Grosse, A. V., and C. S. Strokes: Plasma Jet Chemistry. Temple Univ., June, 1963.
132. Grun, A. E.: A Gasdynamic and Spectroscopic Study of the Excitation of Gas Streams. Z. Naturforschg., **9a**, 833 (1954).
133. Grun, A. E., E. Schopper, and B. Schumacher: Application of Intense Corpuscular Beams for the Excitation of Gases. Z. Angew Phys., **6**, 198 (1954).
134. Grun, A. E., E. Schopper, and B. Schumacher: Electron Shadowgraphs, and After glow Picture of Gas Jets at Low Densities. J. Appl. Phys., **24**, 1527 (1953).
135. Halbach, C. R., and L. Freeman: The Enthalpy Sensor — A High Gas Temperature Measuring Probe. Report MR 20, 331, The Marquardt Corporation, June, 1965.

136. Hall, J. G., and C. E. Treanor: Nonequilibrium Effects in Supersonic-Nozzle Flows. AGARD, December, 1967.
137. Halle, H., and C. Price: Development of Test Facilities for Studies in Hypersonic Range. WADD TR 60-414, Part 1, U.S. Air Force, 1960.
138. Hanst, P., and A. Walker: The Infrared Emission Spectra of Plastics Ablating in a Low Enthalpy Air Stream: Measurements of Surface Temperatures and Temperature Profiles Behind the Surfaces. WADD TR 60-101, U.S. Air Force, 1960.
139. Harbour, P. J.: Absolute Determination of Flow Parameters in a Low Density Hypersonic Tunnel. Presented at Rarefied Gas Dynamics Sixth Symposium, 1968.
140. Harbour, P. J., and J. H. Lewis: Preliminary Measurements of the Hypersonic Rarefied Flow Field on a Sharp Flat Plate Using an Electron Beam Probe. Rarefied Gas Dynamics, **II**, 1031, 1967.
141. Hartunian, R. A.: Theory of a Probe for Measuring Local Atom Concentrations in Hypersonic Dissociated Flows at Low Densities. DCAS-TDR-62-101, Aero. Space Report No. TDR-930 (2230-06) TN-2, U.S. Government, 1962.
142. Hass, F. C.: An Evaporating Film Calorimetric Enthalpy Probe. Report No. AD-1651-Y-1, Cornell Aeronautical Laboratory, February, 1963.
143. Hass, F. C., and F. A. Vassallo: Measurement of Stagnation Enthalpy in a High Energy Gas Stream. Chemical Engineering Progress Symposium Series 41, **59**, AIChE (1963).
144. Haverstraw, R.: High-Temperature Extrusion Lubricants. ER 5822, U.S. Air Force, April, 1964.
145. Hecht, G.: A Novel, Near Infrared, Two-Wavelength Pyrometer. Presented at Symposium on Temperature, Its Measurement and Control in Science and Industry, Columbus, Ohio, March 27—31, 1961.
146. Hickman, R. S.: An Experimental Study of Hypersonic Rarefied Flow Over a 10° Cone. Rarefied Gas Dynamics, **II**, 1967.
147. Hickman, R. S.: Electron Beam Flow Field Visualization. Presented to A.P.S. Fluid Dynamics Div., Cleveland, Ohio, November, 1965.
148. Hickman, R. S.: Hypersonic Transitional Flow at the Leading Edge of a Sharp Flat Plate. Presented at Rarefied Gas Dynamics Sixth Symposium, 1968.
149. Hickman, R. S.: Rotational Temperature Measurements in Nitrogen Using an Electron Beam. USCAE 104, Univ. of Southern California, September, 1966.
150. Hidalgo, H.: Ablation of Glassy Materials Around Blunt Bodies of Revolution. J. Am. Rocket Soc., **30**, 806, September (1960).
151. Hiester, N. K., and Carroll F. Clark: Feasibility of Standard Evaluation Precedures for Ablating Materials. NASA CR-379, National Aeronautics and Space Administration, 1965.
152. Hill, W. E.: Plasma Temperature, Relative Intensity of Spectral Lines. Paper 58 in Temperature, Its Measurement and Control in Science and Industry, **3**, Part 1 (1962).
153. Hoerner, S.: Fluid Dynamic Drag. Published by Author, Midland Park, New Jersey, 1958.
154. Hooton, N.: Materials Property Data. QPR No. 1, Bendix Corp., July, 1961.
155. Hottel, H. C., G. C. Williams, and W. P. Jensen: Optical Methods of Measuring Plasma Jet Temperatures. WADD TR-60-676, U.S. Air Force, 1961.
156. Hourt, W.: Plastics as Heat Insulators in Rocket Motors. Ind. Eng. Chem., **9** (1960).
157. Huber, F. J. A.: Probes for Measuring Mass Flux, Stagnation Point Heating and Total Enthalpy of High-Temperature Hypersonic Flows. AIAA Preprint No. 66-750, September, 1966.
158. Hunter, W. W., Jr.: Rotational Temperature Measurements from 300° K to 1000° K with Electron Beam Probe. I.S.A. Preprint 16.12-4-66, October, 1966.

159. Hurlbut, F. C.: An Electron Beam Density Probe for Measurements in Rarefied Gas Flows. WADC-TR-57-644, U.S. Air Force, 1957.
160. Hurtt, W. W., G. Cunnington, A. Funai, J. Grammer, and R. Karlak: Program ASTEC (Advanced Solar Turbo Electric Concept). AFAPL TR-65-53, U.S. Air Force, 1966.
161. Incropera, F. P.: Temperature Measurement and Internal Flow Heat Transfer Analysis for Partially Ionized Argon. Technical Report No. SU 247-11, Department of Mechanical Engineering, Stanford University, August, 1966.
162. Incropera, F. P., and G. Leppert: Investigation of Arc Jet Temperature-Measurement Techniques. ISA Transactions, **6**, January (1967).
163. Jacobs, P. F., and J. Grey: Electron-Heavy Particle Nonequilibrium in a Dense Argon Plasma. Report No. ARL 66-0143, U.S. Air Force, 1966.
164. Jacobs, P. F., and J. Grey: A Criterion for Electron-Heavy-Particle Nonequilibrium in a Partly-Ionized Gas. AIAA Preprint 66-192, March, 1966.
165. Jahn, R. E.: Spectroscopic Measurements of the Temperature of Plasma Jets. Presented at Fifth International Conference on Ionization Phenomena in Gases, 1962.
166. James, W. R.: In Vacuo Trajectory Influence Coefficients and Deployment Studies. Report No.: E 210-64-WRJ 205, AVCO/RAD, 1965.
167. John, R., and W. L. Bade: Recent Advances in Electric Arc Plasma Generation Technology. J. Amer. Rocket Soc. **31**, No. 1 (1961).
168. John, R., and W. Bade: Testing of Reinforced Plastics Under Simulated Re-Entry Conditions. ASTM Special Tech. Publ. 279, P. 93, Symposium on Reinforced Plastics for Rockets and Aircraft American Society for Testing and Materials, 1959.
169. John, R., and J. Recesso: Ablation Characteristics of a Subliming Material Using Arc Heated Air. J. Amer. Rocket Soc., **9** (1959).
170. Johnson, D. H.: Nonequilibrium Electron Temperature Measurement in a Supersonic Arc Jet Using a Cooled Langmuir Probe. Presented at 26th Supersonic Tunnel Association Meeting, Ames Research Center, May 16—18, 1967.
171. Johnson, E. O., and L. Malter: A Floating Double Probe Method for Measurements in Gas Discharges. Phys. Rev., **80**, No. 1 (1950).
172. Julius, J. D.: Measurements of Pressure and Local Heat Transfer on a 20-degree Cone at Large Angles of Attack up to 20-degrees for a Mach Number of 4.95. NASA TN D-179, National Aeronautics and Space Administration, 1959.
173. Kanzlarich, J. J.: Ablation of Reinforced Plastic for Heat Protection. J. of Appl. Mechanics, **32**, No. 1 (1965).
174. Kilburg, R. F.: A High Response Probe for Measurement of Total Temperature and Total Pressure Profiles Through a Turbulent Boundary Layer with High Heat Transfer in Supersonic Flow. AIAA Paper No. 68—374, April, 1968.
175. Kimura, I., and A. Kanzawa: Experiments on Heat Transfer to Wires in a Partially Ionized Argon Plasma. AIAA Journal, **3** (1965).
176. Klein, A. F.: A Survey of Optical Interferometry as Applied to Plasma Diagnostics. AIAA Paper 63-377. Presented at Fifth Biennial Gas Dynamics Symposium, August 14—16, 1963.
177. Kopsel, M., and M. Richter: Research on Method for Measuring Temperatures Between 8000 Degrees and 30,000 Degrees Kelvin. ASD-TDR-62-916, U.S. Air Force, 1962.
178. Kostkowsky, H. J.: The Accuracy and Precision of Measuring Temperatures Above 1000° K. Presented at International Symposium on High-Temperature Technology, Asilomar Conference Ground, October 6—9, 1959.
179. Koubek, F., and A. Timmins: High-Temperature Facilities at the Naval Ordnance Laboratory. NAVWEPS Report 7315, U.S. Navy, 1960.

180. KOVASZNAY, L. S. G.: The Hot Wire Anemometer. Acta, Tech. Acad. Sci Hung., **50**, 131 (1965).
181. KOVASZNAY, L. S. G.: Turbulence Measurement. High Speed Aerodynamics and Jet Propulsion, Princeton Univ. Press, 1954.
182. KRAUSE, L. N., D. R. BUCHELE, and I. WARSHAWSKY: Measurement Techniques for Hypersonic Propulsion. NASA TM X-52299, National Aeronautics and Space Administration, 1967.
183. KRAUSE, L. N., G. E. GLAWE, and R. C. JOHNSON: Heat Transfer Devices for Determining the Temperature of Flowing Gases. Temperature — Its Measurement and Control in Science and Industry, New York: Reinhold Publishing Co., 1962.
184. KROUSE, J.: Characteristics in a High-Enthalpy, Low-Density Wind Tunnel. DTMB-1921, DTMB-AERO-1076, David Taylor Model Basin, September, 1964.
185. KUBANEK, G. R., and W. H. GAUVIN: Plasma Jet Research Facility for Solid-Gas Heat Transfer Studies. Technical Report No. 466, Pulp and Paper Research Institute of Canada, 1966.
186. LADENBERY, R., *et al.*: Physical Measurements in Gas Dynamics and Combustion. Princeton, N. J., Princeton Univ., 1964.
187. LALLY, F. T., and D. LAVERTY: Carbides for Solid Propellant Nozzle Systems. AFRPL TR-68-164, U.S. Air Force, 1968.
188. LAM, S. H.: A General Theory for the Flow of Weakly Ionized Gases. AIAA Journal, **2**, February (1964).
189. LANDAU, H. G.: Heat Conduction in a Melting Solid. Quart. J. Appl. Math. and Phys., **8**, April (1950).
190. LANDRY, B. E.: Nose Cap Developments Tests. D 2 80083, The Boeing Co., September, 1963.
191. LANGMUIR, I.: The Pressure Effect and Other Phenomena in Gaseous Discharges. J. Franklin Inst., **196** (1923).
192. LASZLO, T.: Measurement of Emission of Radiant Energy From Samples Heated by the Plasma Jet. AVCO RAD Technical Memorandum 60-14, 31 March, 1960.
193. LAUFER, J.: The Structure of Turbulence in Fully Developed Pipe Flow. NACA TN 2954, National Advisory Committee for Aeronautics, 1953.
194. LEADON, B. M., and C. J. SCOTT: Mass Transfer Cooling at Mach Number 4.8. J. Aeron. Sci., **25**, January (1958).
195. LEADON, B. M., and C. J. SCOTT: Measurement of Recovery Factor and Heat Transfer Coefficients with Transpiration Cooling in a Turbulent Boundary Layer at M = 3.0 Using Air and Helium as Coolants. Research Rep. 126, Institute of Technology University of Minnesota, February, 1956.
196. LEES, L.: Convective Heat Transfer with Mass Addition and Chemical Reactions. Combustion and Propulsion, Third AGARD Colloquim, New York: Pergamon Press, 1959.
197. LEES, L.: Laminar Heat Transfer Over Blunt-Nosed Bodies at Hypersonic Flight Speeds. Jet Propulsion, **26**, No. 4 (1956).
198. LEMAY, A.: The CARDE Turbulent Hypersonic Point Measurement Program. CARDE TN 1772/67, October, 1967.
199. LEONARD, D. A., and J. C. KECK: Schileren Photographs of Projectile Wakes Using Resonance Radiation. J. Amer. Rocket Soc., **32**, No. 7 (1962).
200. LI, Y. T.: Dynamic Pressure Measuring Systems for Jet Propulsion Research. J. Amer. Rocket Soc., **23**, No. 3 (1953).
201. LING, S. C.: Heat Transfer Characteristics of Hot-Film Sensing Elements Used in Flow Measurements. J. of Basic Eng. 82, 1966.
202. LINNELL, R. D.: Incompressible Newtonian Hypersonic Flow Around a Sphere. Research Note 5, Convair Scientific Research Laboratory, General Dynamics, June, 1957.

203. Linnell and Bailey: Similarity Rule Estimation Methods for Cones and Parabolic Noses. J. Aeron. Sci., **23**, No. 8 (1956).
204. Llinas, J.: Electron Beam Measurements of Temperature and Density in the Base Region of a Clustered Rocket Model. AIAA Paper 68-236, March, 1968.
205. Lochte-Holtgreven, W.: Ionization Measurements of High-Temperatures. Temperature, Its Measurement and Control in Science and Industry, **2**, New York: Reinhold Publishing Co., 1955.
206. Lochte-Holtgreven, W.: Production and Measurements of High-Temperatures. Progress in Phys., **XXI** (1958).
207. Lochte-Holtgreven, W., and H. Maecker: Temperature Determination of Free Burning Arcs with the Aid of CN Bands. Zeit. für Phys., **105** (1937).
208. Lord, J.: Design and Performance Characteristics of an Automatic Brightness Pyrometer. Presented at Symposium on Temperature, Its Measurement and Control in Science and Industry, Columbus, Ohio, March, 1961.
209. Lucas, W., and J. Kingsbury: The ABMA Reinforced Plastics Ablation Program. Modern Plastics, **2** (1960).
210. MacArthur, R. C., L. M. Stevenson, and J. Budell: Flow Visualization and Quantitative Gas Density Measurements in Rarefied Gas Flows. ASD-TDR-62-793, U.S. Air Force, 1962.
211. Madorsky, S.: Thermal Degradation of Organic Polymers. SPE Journal, **7** (1961).
212. Madorsky, S., and S. Straus: Thermal Degradation of Polymers at Temperatures up to 850° C. WADC TR 59-64, Part 1, U.S. Air Force, 1959.
213. Madorsky, S., and S. Straus: Thermal Degradation of Polymers at Temperatures up to 1200° C. WADC TR 59-64, Part 2, U.S. Air Force, 1960.
214. Maguire, L.: Density Effects on Rotational Temperature Measurements in Nitrogen Using the Electron Beam Excitation Technique. Presented at Rarefied Gas Dynamics Sixth Symposium, 1968.
215. Maguire, L.: The Effective Spatial Resolution of the Electron Beam Fluorescence Probe in Helium. Rarefied Gas Dynamics, **2**, 1497, New York: Academic Press, 1967.
216. Maguire, L., E. P. Muntz, and J. R. Mallin: Visualization Technique for Low Density Flow Fields. IEEE Transactions on Aerospace and Electric Systems, **2**, 321 (1967).
217. Malliaris, A. C., *et al.*: Optical and Radar Observables of Ablative Materials. AFML TR-66-331, Part 1, U.S. Air Force, 1966.
218. Manos, W., D. Taylor, and A. Tuzzolino: Thermal Protection of Structural, Propulsion, and Temperature-Sensitive Materials for Hypersonic and Space Flight. WADC TR 59-366, Part 2, U.S. Air Force, 1960.
219. Margrave, J. L.: Chemical Reactions in High-Temperature Systems. AFRPL TR-66-67, U.S. Air Force, 1966.
220. Margrave, J. L.: Temperature Measurement in Physico-Chemical Measurements at High-Temperatures. London: Butterworth's Scientific Publications, 1959.
221. Marrone, P. V.: Rotational Temperature and Density Measurements in Underexpanded Jets and Shock Waves Using an Electron Beam Probe. Phys. Fluids, **10**, 521 (1967).
222. Marsden, D. J.: The Measurement of Energy Transfer in Gas-Solid Surface Interactions Using Electron Beam Excited Emission of Light. Rarefied Gas Dynamics, **II**, 566 (1966).
223. Marton, L., D. C. Schubert, and S. R. Mielczarek: Electron Optical Studies of Low-Pressure Gases. NBS Monograph 66, National Bureau of Standards, August 16, 1963.
224. Massey, H. S. W., and E. H. S. Burhop: Electronic and Ionic Impact Phenomena. Oxford University Press, 1951.

225. Massier, P. F., L. H. Back, and E. J. Roschke: Heat Transfer and Laminar Boundary Layer Distributions to an Internal Subsonic Gas Stream at Temperatures up to 13,900° R. Jet Propulsion Laboratory, 1968.
226. McCaa, D. J., and D. E. Rothe: Fluorescence Spectra of Atmospheric Gases Excited by an Electron Beam. Presented at the Symposium on Molecular Structure and Spectroscopy, Ohio State Univ., September, 1968.
227. McCroskey, W. J.: Density and Velocity Measurements in High Speed Flows. AIAA Paper No. 68-392, April, 1968.
228. McGregor, W. K.: Spectroscopic Measurements in Plasmas. AIAA Paper No. 63-374. Presented at the Fifth Biennial Gas Dynamics Symposium, Northwestern Univ., August 14—16, 1963.
229. McNally, J. R., Jr.: Role of Spectroscopy in Thermonuclear Research. J. Opt. Soc. Amer., **49** (1959).
230. Melnik, W. L., and J. R. Weske: Advances in Hot Wire Anemometry. Presented at the International Symposium on Hot Wire Anemometry, Univ. of Md., 20—21 March, 1967.
231. Metcalf, S. C., D. C. Lillicrap, and C. J. Berry: Study of the Effect of Surface Temperature on the Shock-Layer Development Over Sharp-Edged Shapes in Low-Reynolds-Numbers High-Speed Flow. Presented at Rarefied Gas Dynamics Sixth Symposium, 1968.
232. Meyer, N.: Investigation of Greyrad Calorimetric Probe. BSE Thesis, College of Engineering, University of Cincinnati, 1966.
233. Miller, N., and E. Strauss: Effects of Elevated Temperatures and Erosion on Reinforced Plastics Laminates. 13th Annual SPI Tech. Conf., p. 8-B, February, 1958.
234. Miller, W.: Results of Heat Transfer Tests on Laminated Structures by the Use of an Oxy-Hydrogen Torch. NAVWEPS Report 7065, U.S. Navy, May, 1960.
235. Mixer, R., and C. Marynowski: A Study of the Mechanism of Ablation of Reinforced Plastics. WADC TR 59-668, Part 1, U.S. Air Force, 1960.
236. Moore, D. W., Jr.: A Pneumatic Method for Measuring High-Temperature Gases. Aeronaut. Eng. Rev., **7**, May (1948).
237. Munson, T. R., and R. J. Spindler: Transient Thermal Behavior of Decomposing Materials. Part I; General Theory and Application to Convective Heating. Presented at the 30th IAS Annual Meeting, New York, January, 1962.
238. Muntz, E. P.: Direct Measurement of Velocity Distribution Functions. Rarefied Gas Dynamics, **II**, New York: Academic Press, 1966.
239. Muntz, E. P.: Molecular Velocity Distribution-Function Measurements in a Flowing Gas. Phys. Fluids, **II**, 64 (1968).
240. Muntz, E. P.: Static Temperature Measurements in a Flowing Gas. Phys. Fluids, **5**, 1 (1962).
241. Muntz, E. P., and S. Abel: The Direct Measurement of Static Temperatures in Shock Tunnel Flows. Presented at Third Hypervelocity Techniques Symposium, Denver, Colo., March, 1964.
242. Muntz, E. P., S. J. Abel, and F. L. Maguire: The Electron Beam Fluorescence Probe in Experimental Gas Dynamics. Supplement to IEEE Transactions on Aerospace 210, June, 1965,
243. Muntz, E. P., and D. J. Marsden: Electron Excitation Applied to the Experimental Investigation of Rarefied Gas Flows. Rarefied Gas Dynamics, **II**, New York: Academic Press, 1963.
244. Muntz, E. P., and E. J. Softley: An Experimental Study of Laminar Near Wakes. TIS R 65 SD 6, General Electric Co., April, 1965.
245. Muntz, E. P., and E. J. Softley: A Study of Laminar Near Wakes. AIAA Journal, **6**, 961 (1966).

246. Nolan, E. J., and S. M. Scala: The Aerothermodynamic Behavior of Pyrolytic Graphite During Sustained Hypersonic Flight. ARS Conference on Lifting Reentry Vehicles, Palm Springs, California, Paper No. 1969-61, 1961.
247. O'Conner, T. J., E. G. Comfort, and L. A. Cass: Turbulent Mixing of an Axisymmetric Jet of Partially Dissociated Nitrogen With Ambient Air. AIAA Journal, **4**, November (1966).
248. O'Halloran, G. J., and L. Walker: Determination of Chemical Species Prevalent in a Plasma Jet. ASD-TDR-62-644, U.S. Air Force, 1964.
249. Olsen, H. N.: Determination of Properties of Optically Thin Argon Plasma. Paper 60, Temperature, Its Measurement and Control in Science and Industry, **2**, New York: Reinhold Publishing Company, 1962.
250. Olson, R. A., and E. C. Lary: Conductivity Probe Measurements in Flames. ARS Paper No. 2592-62, Presented at Ions in Flames and Rocket Exhausts Conference, California, October 10—12, 1962.
251. Oster, L.: Plasma Diagnostics with the Aid of Cyclotron Radiation. Paper 68, Temperature, Its Measurements and Control in Science and Industry, **2**, New York: Reinhold Publishing Company, 1962.
252. Pannabecker, C.: Inviscid Pressure Drag Coefficients for Sharp and Blunt Cones. RAD-S 210-TR-510-3-4, June, 1965.
253. Pappas, C. C.: Effect on Injection of Foreign Gases on the Skin Friction and Heat Transfer of the Turbulent Boundary Layer. LAS Rep. 59—78, January, 1959.
254. Pearce, W. J.: Plasma-Jet Temperature Measurement. Optical Spectrometric Measurements of High-Temperatures, Univ. of Chicago, 1961.
255. Penner, S. S.: Quantitative Molecular Spectroscopy and Gas Emissivities. Reading, Mass.: Addison Wesley Publishing Company, 1959.
256. Perry, H., H. Anderson, and F. Mihalov: Behavior of Reinforced Plastics Surfaces in Contact with Hot Gases. Presented at 15th Annual SPE Tech. Conf., January, 1959.
257. Petrie, S. L.: An Electron Beam Device for Real Gas Flow Diagnostics. ARL 65-122, U.S. Air Force, 1965.
258. Petrie, S. L.: Boundary Layer Studies in an Arc-Heated Wind Tunnel. Fn. Report RF Project 2033, Ohio State Univ. Research Foundation, April, 1968.
259. Petrie, S. L.: Density Measurements with Electron Beam. AIAA Journal, **4**, 1680 (1966).
260. Petrie, S. L.: Electron Beam Diagnostics. AIAA Paper 66-747, September, 1966.
261. Petrie, S. L.: Flow Field Analyses in a Low Density Arc-Heated Wind Tunnel. 1965 Heat Transfer and Fluid Mechanics Institute Proceedings, Stanford University Press, 1965.
262. Petrie, S. L., and A. A. Boiarski: The Electron Beam Diagnostic Technique for Rarefied Flows at Low Static Temperature. Presented at Rarefied Gas Dynamics Sixth Symposium, 1968.
263. Petrie, S. L., and G. A. Pierce: Boundary Layer Studies in Rarefied Plasma Flows. Rarefied Gas Dynamics, **II**, 1107, New York: Academic Press, 1967.
264. Petrie, S. L., G. A. Pierce, and E. S. Fishbourne: Analysis of the Thermochemical State of an Expanded Air Plasma. AFFDL-TR-64-191, U.S. Air Force, 1965.
265. Petschek, H., and S. Byron: Approach to Equilibrium Ionization Behind Strong Shock Waves in Argon. Ann. Phys. NY, **1** (1957).
266. Petterson, G., and D. Schmidt: A Critical Review of Methods for Determining Properties of Reinforced Plastics at Elevated Temperatures. Presented at 15th Annual SPE Tech. Conf., January, 1959.
267. Pfahl, R. C., Jr.: The Determination of Thermal Properties for Charring Ablators from Transient Internal Temperature Measurements. R 720-65-179, AVCO/RAD, January 3, 1966.

268. PLANT, H., and M. GOLDSTEIN: Plastics for High-Temperature Thermal Barriers. Presented at 16th Annual SPE Meeting, Sec. 18-D, February, 1960.
269. POTTER, J. L., G. D. ARNEY, M. KINSLOW, and W. H. CARDEN: Gasdynamic Diagnosis of High-Speed Flows Expanded from Plasma States. IEEE Transactions on Nuclear Science, NS-11, January, 1964.
270. POWERS, D., and J. DICKSON: Investigation of Feasibility of Utilizing Available Heat Resistant Materials for Hypersonic Leading Edge Applications. Bell Aerosystems Co., December, 1960.
271. PREDVODITELEV, A. S.: Studies in Physical Gas Dynamics. NASA-TT-F-505, National Aeronautics and Space Administration, 1968.
272. PROSEN, S., M. KINNA, and F. BARNET: The Development of a Reliable Insulation for Solid Propellant Rocket Motors. Presented at 17th Annual SPE Tech. Conf., **VII**, January, 1961.
273. PYTTE, A., and A. R. WILLIAMS: On Electrical Conduction in a Nonuniform Helium Plasma. Aeronautical Research Lab., U.S. Air Force, 1963.
274. QUINVILLE, J. A., and J. SOLOMON: Ablating Body Heat Transfer. SSD-TDR-63-159, Aerospace Corporation, 15 January, 1964.
275. RAEZER, S. D., and H. L. OLSEN: The Intermittent Thermometer: A New Technique for the Measurement of Extreme Temperature. Temperature — Its Measurement and Control in Science and Industry, **3**, New York: Reinhold, 1962.
276. RAGENT, B., and C. NOBEL: X-ray Densitometer. Vidya Report No. 71, 1962.
277. RAUSCHER, M.: Introduction to Aeronautical Dynamics New York: J. Wiley and Sons, 1953.
278. REBROV, A. K., and R. G. SHARAFUTDINOV: The Structure of the Freely Expanding Carbon Dioxide Jet in Vacuum. Book of Abstracts, **I**, Sixth International Symposium on Rarefied Gas Dynamics, 1968.
279. REED, T.: Induction Coupled Plasma Torch. Massachusetts Inst. of Technology, October, 1960.
280. ROBBEN, F., and L. TALBOT: An Experimental Study of the Rotational Distribution of Nitrogen in a Shock Wave. AS-65-6, University of California, 1965.
281. ROBBEN, F., and L. TALBOT: Measurement of Shock Wave Thickness by the Electron Beam Fluorescence Method. AS-65-4, University of California, 1965.
282. ROBBEN, F., and L. TALBOT: Some Measurements of Rotational Temperatures in a Low Density Wind Tunnel Using Electron Beam Fluorescence. AS-65-5, University of California, 1965.
283. ROMIG, M.: Conical Flow Parameters for Air in Dissociation Equilibrium. Convair Report 7, General Dynamics, May, 1960.
284. ROSENBERRY, J., H. SMITH, and J. WURST: Evaluation of Materials Systems for Use In Extreme Thermal Environments Utilizing an Arc-Plasma-Jet. WADD TR 60-926, U.S. Air Force, 1961.
285. ROSNER, D. E.: Application of Heat Flux Potentials to the Calculation of Convective Heat Transfer in Chemically Reacting Gases. Report No. TP-20, AeroChem Research Laboratories, December 14, 1960.
286. ROSNER, D. E.: Catalytic Probes for the Determination of Atom Concentrations in High Speed Gas Streams. J. Amer. Rocket Soc., **32**, July (1962).
287. ROSNER, D. E.: Diffusion and Chemical Surface Catalysis in a Low Temperature Plasma Jet. ASME Paper No. 61-WA-160. Presented at Winter Annual Meeting, December 19, 1961.
288. ROSNER, D. E.: Diffusion and Chemical Surface Catalysis in a Low-Temperature Plasma Jet. J. Heat Transfer, **84**, No. 4 (1962).
289. ROSNER, D. E.: On the Effects of Diffusion and Chemical Reaction in Convective Heat Transfer. Report No. TM-13, AeroChem Research Laboratories, June 8, 1959.

290. Rosner, D. E.: Sensitivity of a Downstream Langmuir Probe to Rocket Motor Chamber Conditions. Report No. TP-109, AeroChem Research Laboratories, January, 1965.
291. Rosner, D. E.: Similitude Treatment of Hypersonic Stagnation Heat Transfer. J. Amer. Rocket Soc., **29**, February (1959).
292. Rosner, D. E., A. Fontijn, and S. C. Kurzius: Chemical Scavenger Probes in Non-equilibrium Gasdynamics. AIAA Journal, **2** (1964).
293. Rothe, D. E.: Electron Beam Studies of the Diffusive Separation of Helium-Argon Mixtures. Phys. Fluids, **9**, 1643 (1966).
294. Rothe, D. E.: Flow Visualization Using a Traversing Mechanism. AIAA Journal, **3**, 1945 (1965).
295. Rubesin, M. W.: A Modified Analogy for the Compressible Turbulent Boundary Layer on a Flat Plate. NACA TN 2917, National Advisory Committee for Aeronautics, 1953.
296. Rubesin, M. W., C. C. Pappas, and A. F. Okuno: The Effect of Fluid Injection on the Compressible Turbulent Boundary Layer — Preliminary Tests on Transpiration Cooling of a Flat Plate at $M = 2.7$ with Air as the Injected Gas. NACA RM A 55119, National Advisory Committee for Aeronautics, 1955.
297. Russell, G. R., and S. Bryon: Performance and Analysis of a Crossed-Field Accelerator. 63 005, Philco, March, 1963.
298. Sandorff, P. E.: Orbital and Ballistic Flight; An Introduction to Space Technology. Dept. of Aeronautics and Astronautics, MIT, Cambridge, Mass., 1960.
299. Scala, S.: The Hypersonic Environment. Aerospace Eng., **22**, (1935).
300. Schmidt, D.: Ablative Materials. ASD TR 61-322, U.S. Air Force, 1961.
301. Schmidt, D.: Behavior of Plastics in Re-entry Environments. Modern Plastics, **3** (1960).
302. Schneider, P. J., and R. E. Maurer: Coolant Starvation in a Transpiration — Cooled Hemispherical Shell. J. Spacecraft and Rockets, **5**, June (1968).
303. Schopper, E., and B. Schumacher: Messung von Gasdichten mit Korpuskularstrahlsonden. Z. Naturforsch., **6a** (1951).
304. Schurman, E. E. H.: Engineering Methods for the Analysis of Aerodynamic Heating. AVCO/RAD TM-63-68, October, 1963.
305. Schwartz, H., and R. Farmer: Thermal Irradiation of Plastic Materials. WADD TR-60-647, U.S. Air Force, 1960.
306. Schwartz, H., and B. Lisle: Effects of High Intensity Thermal Radiation on Plastic Laminates. Presented at 13th Annual SPI Tech. Conf., February, 1958.
307. Schweiger, R.: High-Intensity Arc-I (Instrumentation). AVCO Corp. (No Date.)
308. Schymacher, B.: Dynamic Pressure Stage Elements for the Projection of Intense Monoenergetic Corpuscular Beams Into Gases at High Pressure. Optik, **10**, 116 (1953).
309. Sebacher, D. I.: An Electron Beam Study of Vibrational and Rotational Relaxing Flows of Nitrogen and Air. Proceedings of the 1966 Heat Transfer and Fluid Mechanics Institute, Stanford University Press, 1966.
310. Sebacher, D. I.: Diffusive Separation in Shock Waves and Free Jets of Nitrogen Helium Mixtures. AIAA Journal, **6**, 51 (1968).
311. Sebacher, D. I.: Flow Visualization Using an Electron-Beam Afterglow in N_2 and Air. AIAA Journal, **4**, 1858 (1966).
312. Sebacher, D. I.: Primary and Afterglow Emission for Low-Temperature Gaseous Nitrogen Excited by Fast Electrons. J. Chem. Phys., **44**, 4131 (1966).
313. Sebacher, D. I.: Study of Collision Effects Between the Constituients of a Mixture of Helium and Nitrogen Gases When Excited by a 10 Kev Electron Beam. J. Chem. Phys., **42**, 1368 (1965).
314. Sebacher, D. I., and R. J. Duckett: A Spectrographic Analysis of a 1-Foot Hypersonic-Arc-Tunnel Airstream Using an Electron Beam Probe. NASA TR-114, National Aeronautics and Space Administration, 1964.

315. Sheahan, T. P., and M. Camac: Electron Beam Measurements On-Board Re-entry Vehicles. Presented at Rarefied Gas Dynamics Sixth Symposium, 1968.
316. Sheridan, R. A., N. S. Diaconis, and W. R. Warren: Performance of Several Ablation Materials in Simulated Planetary Atmospheres. R 63 SD 35, General Electric Co., April, 1963.
317. Sherman, F. S.: New Experiments on Impact Pressure Interpretation in Supersonic and Subsonic Rarefied Airstreams. Engineering Report No. HE 150-99, Univ. of California, December 21, 1951.
318. Sherman, M. P., and J. Grey: Calculation of Transport Properties for Mixtures of Helium and Partly-Ionized Argon. Report No. 673, Princeton University Aeronautical Engineering Laboratory, December, 1963.
319. Sherman, M. P., and J. Grey: Interactions Between a Partly-Ionized Laminar Subsonic Jet and a Cool Stagnant Gas. Princeton University, September, 1964.
320. Shirleigh, S.: The Determination of Flame Temperatures by Infrared Radiation. Paper 62, Third Symposium on Combustion and Flame and Explosion Phenomena, 1949.
321. Simmons, F. S., and G. E. Glawe: Theory and Design of a Pneumatic Temperature Probe and Experimental Results Obtained in a High-Temperature Gas Stream. NACA TN 3893, National Advisory Committee for Aeronautics, 1957.
322. Smith, R. B.: N_2 First Negative Band Broadening Due to Electron Beam Excitation. Presented at Rarefied Gas Dynamics Sixth Symposium, 1968.
323. Smith, R. B.: Shock Structure in a Diatomic Gas. Presented at Rarefied Gas Dynamics Sixth Symposium, 1968.
324. Snoddy, W., and E. Miller: Areas of Research on Surfaces for Thermal Control. NASA Washington Symposium on Thermal Radiation of Solids, National Aeronautics and Space Administration, 1965.
325. Softley, E. J.: Use of a Pulse Heated Fine Wire Probe for the Measurement of Total Temperature in Shock Driven Facilities. AIAA Paper No. 68-393, April, 1968.
326. Softley, E. J., E. P. Muntz, and R. E. Zempel: Experimental Determination of Pressure, Temperature, and Density in Some Laminar Hypersonic Near Wakes. TIS-R 64 SD 35, General Electric Co., 1964.
327. Sprengel, U.: Kalorimetrische Messungen von örtlichen Temperaturen in einem Stickstoff-Plasmastrahl. Raumfahrtforschung und Technik, Beilage zur Atompraxis, 1966.
328. Staats, G. E., W. K. McGregor, and J. P. Frolich: Magnetogasdynamic Experiments Conducted in a Supersonic Plasma Arc Tunnel. AEDC TR-67-266, U.S. Government, 1968.
329. Stalder, J. R., F. K. Goodwin, B. Ragent, and C. E. Noble: Aerodynamic Application of Plasma Wind Tunnels. WADD TN 60-1, U.S. Air Force, 1960.
330. Steg, L.: Materials for Heat Protection of Satellites. J. Amer. Rocket Soc., **9** (1960).
331. Stein, E.: Summary of AVCO RAD Studies on the Use of Effective Properties for the Thermal Analysis of Heat Shield Materials. AVCO/RAD, Wilmington, Mass., March 16, 1964.
332. Stern, M. O., and E. M. Dacus: Piezoelectric Probe for Plasma Research. Rev. Sci. Instr., **32**, No. 2, February (1961).
333. Steven, G.: High-Temperature Thermocouples. High-Temperature Technology, New York: John Wiley and Sons, 1956.
334. Stewart, J. D.: Transpiration Cooling: An Engineering Approach. MSVD-TIS-R 59 SD 338, General Electric Co., May 1, 1959.
335. Stroubal, G., D. M. Curry, and J. M. Janney: Thermal Protection System Performance of the Apollo Command Module. Presented at AIAA/ASME 7th Structures and Materials Conference, Cocoa Beach Florida, April 18—20, 1966.
336. Su, C. H., and S. H. Lam: Continuous Theory of Spherical Electrostatic Probes. Phys. Fluids, **6**, October (1963).

337. Suits, G. C.: The Determination of Arc Temperatures from Sound Velocity Measurement. Phys., **6** (1935).
338. Sutton, G.: Ablation of Reinforced Plastics in Supersonic Flow. J. Aerospace Sci., **6** (1960).
339. Talbot, L.: Theory of the Stagnation-Point Langmuir Probe. Phys. Fluids, **3**, 289—297 (1960).
340. Talbot, L.: Theory of the Stagnation-Point Langmuir Probe. Tech. Report HE-150-168, University of California, March 30, 1959.
341. Talbot, L., J. E. Katz, and C. L. Brundin: A Comparison Between Langmuir Probe and Microwave Electron Density Measurements in an Arc-Heated Low-Density Supersonic Wind Tunnel. Engineering Report HE-150-186, University of California, January 27, 1961.
342. Tanaki, F., and C. S. Sim: Flash X-Ray Radiography for the Density Measurement in a Hypersonic Air Flow. J. Phys. Soc. of Japan, **14**, No. 5 (1959).
343. Tempelmeyer, K. E.: Development of a Steady-Flow J X B Accelerator for Wind Tunnel Application. TDR-64-261, U.S. Air Force, 1964.
344. Tillian, D. J.: A Survey of Plasma Arc Heaters. Report 00-49, Vought Astronautics Division, Ling-Temco-Vought Company, April 18, 1962.
345. Tirumalesa, D.: A Preliminary Study of the Flow Field Around a Blunt Body in Hypersonic Low Density Flow. USXAW 105, Univ. of Southern Calif., November, 1965.
346. Tirumalesa, D.: An Experimental Study of Hypersonic Rarefied Flow Over a Blunt Body. AIAA Journal, **6**, 369 (1968).
347. Tolosko, R. J.: A Study of the Flow Field, Aerodynamic Heating, and Ablation of Sharp Cones Entering the Earth's Atmosphere at Supersonic Velocity. AVCO/RAD TM-62-17, April 18, 1962.
348. Trochan, A. M.: Measurements of Parameter for Gas Flows by Means of a Beam of East Electrons. J. Appl. Math. and Phys., **3**, 81 (1964).
349. Vassallo, F. A.: A Fast Acting Miniature Enthalpy Probe. AIAA Paper No. 68-391, April, 1968.
350. Vassallo, F. A.: Miniature Enthalpy Probes for High-Temperature Gas Streams. ARL 66-0115, U.S. Air Force, 1966.
351. Vassallo, F. A., and J. Beal: Structural and Insulative Characteristics of Reinforced Plastic Materials During Ablation. Presented at 16th Annual SPI Tech. Conf., February, 1961.
352. Vassallo, F. A., N. Wahl, G. Sterbutzel, and J. Beal: The Study of Ablation of Structural Plastic Materials. WADC TR 59-368, Part 1, U.S. Air Force, 1959.
353. Vidale, G. L.: Measurement of the Absorption of Resonance Lines. GE-R 60 SD 331, General Electric Space Sciences Lab., May, 1960.
354. Vidale, G. L.: Measurement of the Vapor Pressure of Atomic Species from Spectrophotometric Measurements of the Absorption of the Resonance Lines. IV GE-R 60 SD 333, General Electric Space Sciences Lab., July, 1960.
355. Vidale, G. L.: Measurement of the Vapor Pressure of Atomic Species from Spectrophotometric Measurements of the Absorption of the Resonance Lines. III., GE-R 60 SD 390, General Electric Space Sciences Lab., June, 1960.
356. Vogan, J.: Thermal Protective Surfaces for Structural Plastics. WADD TR 60-110, Part 1, U.S. Air Force, 1960.
357. Wada, I.: Experimental Study of Hypersonic Low Density Flow by Using the Electron Beam Fluorescence Method. Presented at Rarefied Gas Dynamics Symposium, 1967.
358. Wainwright, J. B.: Experimental Investigation of the Density Flow Field in the Stagnation Region of a Blunt Body in High Speed Rarefied Flow. BD 339-101, CELESCO, 1966.

359. WALLACE, J. E.: Hypersonic Turbulent Boundary Layer Measurements Using an Electron Beam. AN-2112-Y-1, Cornell Aeronautical Laboratory, August, 1968.
360. WARREN, W., and N. DIACONIS: The Performance of Ablation Materials as Heat Protection for Re-Entering Satellite. WADD TR 60-58, U.S. Air Force, 1960.
361. WAYMOUTH, J. F.: Perturbation of a Plasma by a Probe. Phys. Fluids, **7**, 1843—1854 (1964).
362. WEINSTEIN, L. M., R. D. WAGNER JR., and S. L. OCHELTREE: Electron Beam Flow Visualization in Hypersonic Helium Flow. AIAA Journal, **6**, 1623 (1968).
363. WELCH, N. E.: The Laser Anemometer — A New Tool In Flow Measurement. Space Age News, **12**, March (1969).
364. WELCH, N. E., and W. J. TOMME: The Analysis of Turbulence from Data Obtained with a Laser Velocimeter. AIAA Paper No. 67-179, January, 1967.
365. WETHERN, R. J.: Method of Analyzing Laminar Air Arc-Tunnel Heat Transfer Data. AIAA Journal, **I**, July (1963).
366. WHARTON, C. E.: Plasma Diagnostics. AIAA Paper No. 63-367, Fifth Biennial Gas Dynamics Symposium, Northwestern University, August 14—16, 1963.
367. WIEBELT, PARMA, and KNEISSL: Spacecraft Temperature Control by Thermostatic Fins-Analysis, Part II. NASA CR-155, National Aeronautics and Space Administration, January, 1965.
368. WILDHACK, W. A.: A Versatile Pneumatic Instrument Based on Critical Flow. Review of Sci. Instr., **21**, January (1950).
369. WILLIAMS, P. M., and J. GREY: Simulation of Gaseous Core Nuclear Rocket Characteristics Using Cold and Arc Heated Flows. NASA Contractor Report No. CR-690, National Aeronautics and Space Administration, June, 1967.
370. WINKLER, E. L., and R. GRIFFIN JR.: Effects of Surface Recombination on Heat Transfer to Bodies in a High Enthalpy Stream of Partially Dissociated Nitrogen. NASA TND-1146, National Aeronautics and Space Administration, 1961.
371. WINKLER, W.: Interferometry in Physical Measurements in Gas Dynamics and Combustion. Princeton, N. J.: Princeton University Press, 1954.
372. WIZANSKY, D., and E. RUSS: An Oxyacetylene Flame Apparatus for Surface Ablation Studies. Tech. Report HE-150-167, Univ. of California, 28 January, 1959.
373. WIZANSKY, D., E. RUSS, and W. GIEDT: An Oxyacetylene Flame Apparatus for Surface Ablation Studies. Tech. Report HE-150-171, Univ. of California, May, 1959.
374. WURST, J., J. CHERRY, D. GERDEMAN, and N. HECHT: The High-Temperature Evaluation of Aerospace Materials. AFML-TR-66-308, U.S. Air Force, 1966.
375. WURST, J., J. CHERRY, and N. HECHT: The Evaluation of High Temperature Materials. QPR No. 1, University of Dayton Research Institute, April, 1964.
376. WYATT, L. A.: Low-Speed Measurements of Skin Friction on a Slender Wing. ARC-R & M-3499, Aeronautical Research Council, 1968.
377. YARGER, F.: Electromechanical Influences on High-Temperature Flows. ATL TR-66-38, U.S. Air Force, 1966.
378. YASUBARA, M.: Rotational Temperature Measurements of the Flow Expanding From a Low Density Sonic Orifice. USCAE 103, Univ. of Southern California, August, 1966.
379. YEH, Y., and H. Z. CUMMINS: Localized Fluid Flow Measurements with an He-Ne Laser Spectrometer. Applied Physics Letters, **4**, May, 1964.
380. ZEMPEL, R. E., and E. P. MUNTZ: Slender Body Near Wake Density Measurements at Mach Numbers Thirteen and Eighteen. TIS-R 63 SD 55, General Electric Co., 1963.
381. ZLOTNICK, M., and B. NORDQUIST: Calculation of Transient Ablation. Presented at International Heat Transfer Conference, Boulder, Colorado, September, 1961.

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