

Chronological Index

B92-107 Relationships for Motor Temperature Sensitivity. R. E. Hamke, *Thiokol Corporation*; and J. R. Osborn, *Purdue University* (8, 3, p. 723) Technical Note

Technical Comment by Robert L. Glick, *Talley Defense Systems*; and Wm. Ted Brooks, *Hercules, Inc.* (10, 5, p. 754)

Reply (11, 5, p. 1091)

B94-100 Design of Axisymmetric Channels with Rotational Flow. M. Koumandakis, V. Dedoussis, P. Chaviaropoulos, and K. D. Papailiou, *National Technical University of Athens, Greece* (10, 5, p. 729) Article based on AIAA Paper 93-3117

Technical Comment by G. Emanuel, *University of Oklahoma* (11, 5, p. 1092)

B95-001 Deficiencies and Requirements in Modeling of Slag Generation in Solid Rocket Motors. Mark Salita, *Analytical Methods, Inc.* (11, 1, p. 10) Article

B95-002 Microstructural Basis for Enhanced Shock-Induced Chemistry in Single Crystal Ammonium Perchlorate. W. L. Elban, *Loyola College*; and H. W. Sandusky, B. C. Beard, and B. C. Glancy, *Naval Surface Warfare Center* (11, 1, p. 24) Article

B95-003 Flow of a Fissioning Gas in an Outflow Disk Magneto-hydrodynamic Generator. Gerard E. Welch, Edward T. Dugan, and William E. Lear Jr., *University of Florida* (11, 1, p. 32) Article based on AIAA Paper 93-3163

B95-004 Effect of Bleed Configuration on Shock/Laminar Boundary-Layer Interactions. A. Hamed, *University of Cincinnati*; and T. Lehnig, *Cold Jet, Inc.* (11, 1, p. 42) Article based on AIAA Paper 91-2014

B95-005 Application of Sweep to Improve the Efficiency of a Transonic Fan Part I: Design. R. J. Neubert, D. E. Hobbs, and H. D. Weingold, *Pratt and Whitney, United Technologies* (11, 1, p. 49) Article based on AIAA Paper 90-1915

Errata (11, 3, p. 575)

B95-006 Investigation of Three-Dimensional Flowfield at the Exit of a Turbine Nozzle. M. Zaccaria and B. Lakshminarayana, *Pennsylvania State University* (11, 1, p. 55) Article based on AIAA Paper 92-3326

B95-007 Low-Density Nozzle Flow by the Direct Simulation Monte Carlo and Continuum Methods. Chan-Hong Chung, Suk C. Kim, and Robert M. Stubbs, *NASA Lewis Research Center*; and Kenneth J. De Witt, *University of Toledo* (11, 1, p. 64) Article based on AIAA Paper 93-0727

B95-008 Numerical Analysis of Rarefied Gas Flow Through Two-Dimensional Nozzles. Chan-Hong Chung, *NASA Lewis Research Center*; and Kenneth J. De Witt, Duen-Ren Jeng, and Theo G. Keith Jr., *University of Toledo* (11, 1, p. 71) Article

B95-009 Use of Swirl-Induced Particle Separation to Clean Nuclear Rocket Plumes. D. Oh and D. Hastings, *Massachusetts Institute of Technology* (11, 1, p. 79) Article

B95-010 Velocity Measurements Downstream of a Lobed-Forced Mixer with Different Trailing-Edge Configurations. Simon C. M. Yu, Joon H. Yeo, and Jeffrey K. L. Teh, *Nanyang Technological University, Singapore* (11, 1, p. 87) Article based on AIAA Paper 94-0018

B95-011 History of Propulsion for Single-Stage-to-Orbit and

Multiple-Stage Vehicles. James A. Martin, *University of Alabama* (11, 1, p. 98) Article based on AIAA Paper 93-1942

B95-012 Calculations for Steady Propagation of a Generic Ram Accelerator Configuration. Matthew J. Grismer and Joseph M. Powers, *University of Notre Dame* (11, 1, p. 105) Article based on AIAA Paper 94-0550

B95-013 Flame Stabilization Characteristics of Strut Divided into Two Parts in Supersonic Airflow. Takashi Niioka, Kenichi Terada, Hideaki Kobayashi, and Susumu Hasegawa, *Tohoku University, Japan* (11, 1, p. 112) Article

B95-014 Engineering Design Models for Ramjet Efficiency and Lean Blowoff. R. C. Prior, D. K. Fowler, and A. M. Mellor, *Vanderbilt University* (11, 1, p. 117) Article based on AIAA Paper 90-2453

B95-015 Aluminum Alkyl Derivatives—Ignition and Combustion Enhancers for Supersonic Combustors. T. W. Ryan III, S. T. Schwab, and W. W. Harlowe, *Southwest Research Institute* (11, 1, p. 124) Article based on AIAA Paper 92-3841

B95-016 Experimental Investigation of Kerosene Fuel Combustion in Supersonic Flow. Vyacheslav A. Vinogradov, Sergey A. Kobigsky, and Michael D. Petrov, *Central Institute of Aviation Motors, Russia* (11, 1, p. 130) Article based on AIAA Paper 92-3429

B95-017 Atomization Characteristics of Impinging Liquid Jets. H. M. Ryan, W. E. Anderson, S. Pal, and R. J. Santoro, *Pennsylvania State University* (11, 1, p. 135) Article

B95-018 Spatial Instability of a Viscous Liquid Sheet. E. A. Ibrahim, *Tuskegee University* (11, 1, p. 146) Article based on AIAA Paper 94-0562

B95-019 Structure of Coal Water Slurry Sprays. Manikandan Prithiviraj and Malcom J. Andrews, *Texas A&M University* (11, 1, p. 153) Article

B95-020 NO_x Model for Lean Combustion Concept. N. K. Rizk and H. C. Mongia, *General Motors Corporation* (11, 1, p. 161) Article based on AIAA Paper 92-3341

B95-021 Numerical Experiments on the Vortex-Flame Interactions in a Jet Diffusion Flame. Fumiaki Takahashi, *University of Dayton*; and Viswanath R. Katta, *Systems Research Laboratories, Inc.* (11, 1, p. 170) Article based on AIAA Paper 93-0456

B95-022 Wave Rotor Charging Process: Effects of Gradual Opening and Rotation. L. M. Larosiliere, *Ohio Aerospace Institute* (11, 1, p. 178) Article based on AIAA Paper 93-2526

B95-023 Development of a Three-Dimensional Model for the Darrieus Rotor and Its Wake. R. Ganesh Rajagopalan, *Iowa State University*; and Dale E. Berg and Paul C. Klimas, *Sandia National Laboratories* (11, 2, p. 185) Article

B95-024 Three-Dimensional Interactions in the Rotor of an Axial Turbine. H. P. Hodson and M. R. Banieghbal, *University of Cambridge, England, UK*; and G. M. Dailey, *Rolls-Royce plc, England, UK* (11, 2, p. 196) Article based on AIAA Paper 93-2255

B95-025 Blade Row Interaction Effects on Flutter and Forced

Response. Daniel H. Buffum, *NASA Lewis Research Center* (11, 2, p. 205) Article based on AIAA Paper 93-2084

B95-026 Chimera Grids in Computing Flowfields in Turbine-Blade-Internal-Coolant Passages. M. A. Stephens, M. J. Rimplinger, and T. I-P. Shih, *Carnegie Mellon University*; and K. C. Civinskas, *NASA Lewis Research Center* (11, 2, p. 213) Article based on AIAA Paper 93-2559

B95-027 Navier-Stokes Analysis of Turbine Flowfield and External Heat Transfer. J. Luo and B. Lakshminarayana, *Pennsylvania State University* (11, 2, p. 221) Article based on AIAA Paper 93-7075

B95-028 Particle Dynamics Simulations in Inlet Separator with an Experimentally Based Bounce Model. A. Hamed, Y. D. Jun, and J. J. Yeuan, *University of Cincinnati* (11, 2, p. 230) Article based on AIAA Paper 93-2156

B95-029 Three-Dimensional Viscous Flow Analysis of an Advanced Ducted Propeller Subsonic Inlet. Chanthy Iek and Donald R. Boldman, *NASA Lewis Research Center*; and Mounir Ibrahim, *Cleveland State University* (11, 2, p. 236) Article based on AIAA Paper 93-1847

B95-030 Dual-Spray Airblast Fuel Nozzle for Advanced Small Gas Turbine Combustors. Clifford E. Smith, Eric J. Fuller, and D. Scott Crocker, *CFD Research Corporation*; and L. T. Mekkes and J. C. Sheldon, *Delavan, Inc.* (11, 2, p. 244) Article based on AIAA Paper 93-2336

B95-031 Penetration and Mixing of Radial Jets in Neck-Down Cylindrical Crossflow. G. Zhu and M.-C. Lai, *Wayne State University*; and T. Lee, *Johns Hopkins University* (11, 2, p. 252) Article based on AIAA Paper 92-3091

B95-032 Acoustic Control of Combustor Primary Zone Air-Jet Mixing. P. J. Vermeulen, V. Ramesh, and B. Sanders, *University of Calgary, Canada*; and J. Odgers, *Université Laval, Canada* (11, 2, p. 261) Article

B95-033 Feedback Control of a Dump Combustor with Fuel Modulation. K. J. Wilson, E. Gutmark, K. C. Schadow, and R. A. Smith, *Naval Air Warfare Center Weapons Division* (11, 2, p. 268) Article

B95-034 Combustion Control of Solid Rocket Motors by Polytetrafluoroethylene Sublimates. Takeshi Tachibana, *Kyushu Institute of Technology, Japan*; and Hideyuki Horisawa and Itsuro Kimura, *Tokai University, Japan* (11, 2, p. 275) Article based on AIAA Paper 93-2170

B95-035 Study of the Flow Turning Loss in a Simulated Solid Rocket Motor. Lawrence M. Matta and Ben T. Zinn, *Georgia Institute of Technology* (11, 2, p. 278) Article based on AIAA Paper 93-0115

B95-036 History of the Development of Solid Rocket Propellant in France. Alain Davenas, *SNPE Defense and Space, France* (11, 2, p. 285) Article based on AIAA Paper 93-1785

B95-037 Dynamic Modeling of Starting Capabilities of Liquid Propellant Rocket Engines. T. J. Avampato and C. Saltiel, *University of Florida* (11, 2, p. 292) Article

B95-038 Ignition and Combustion Performance of Scramjet Combustors with Fuel Injection Struts. Goro Masuya, Tomoyuki Komuro, and Atsuo Murakami, *National Aerospace Laboratory, Japan*; Noboru Shinozaki and Akihiro Nakamura, *Nissan*

Motor Co., Ltd., Japan; and Motohide Murayama and Katsura Ohwaki, *Ishikawajima-Harima Heavy Industries, Japan* (11, 2, p. 301) Article

B95-039 Mixing and Chemical Kinetics Interactions in a Mach 2 Reacting Flow. Corin Segal, James C. McDaniel, Robert B. Whitehurst, and Roland H. Krauss, *University of Virginia* (11, 2, p. 308) Article

B95-040 Mixing and Penetration Studies of Sonic Jets in a Mach 2 Freestream. M. R. Gruber and A. S. Nejad, *U.S. Air Force Wright Laboratory*; T. H. Chen, *U.S. Air Force Wright Laboratory*; and J. C. Dutton, *University of Illinois at Urbana-Champaign* (11, 2, p. 315) Article based on AIAA Paper 94-0709

B95-041 Space Shuttle Simplified LO2 Check Valve Development Tests. Michael J. Barrett and Gregory S. Aber, *NASA Johnson Space Flight Center*; and Timothy W. Reith, *Rockwell International Corporation* (11, 2, p. 324) Article based on AIAA Paper 93-2486

B95-042 Geometry Effects in the Dynamic Response of the Cavitating LE-7 Liquid Oxygen Pump. Takashi Shimura, *National Aerospace Laboratory, Japan* (11, 2, p. 330) Article based on AIAA Paper 93-2126

B95-043 Effects of Applied Magnetic Fields on Performance of a Quasisteady Magnetoplasma-dynamic Arcjet. Hirokazu Tahara, Yoichi Kagaya, and Takao Yoshikawa, *Osaka University, Japan* (11, 2, p. 337) Article based on AIAA Paper 91-073

B95-044 Geometric Scaling of Applied-Field Magnetoplasma-dynamic Thrusters. Roger M. Myers, *Sverdrup Technology, Inc.* (11, 2, p. 343) Article

B95-045 Thrust Formula for Applied-Field Magnetoplasma-dynamic Thrusters Derived from Energy Conservation Equation. Akihiro Sasoh, *Tohoku University, Japan*; and Yoshihiro Arakawa, *University of Tokyo, Japan* (11, 2, p. 351) Article

B95-046 Numerical Investigation of Bluff-Body Stabilized Microwave Plasmas. S. Venkateswaran and C. L. Merkle, *Pennsylvania State University* (11, 2, p. 357) Article

B95-047 Inertial-Electrostatic-Fusion Propulsion Spectrum: Air-Breathing to Interstellar Flight. Robert W. Bussard and Lorin W. Jameson, *Energy/Matter Conversion Corporation* (11, 2, p. 365) Article based on AIAA Paper 93-2006

B95-048 Photovoltaic Catenary-Tent Array for the Martian Surface. M. Crutchik, *Tel-Aviv University, Israel*; Anthony J. Colozza, *Sverdrup Technology, Inc.*; and J. Appelbaum, *NASA Lewis Research Center* (11, 2, p. 373) Article

B95-049 Intake Flow Modeling in a Four-Stroke Diesel Using KIVA-3. Randy P. Hessel and Christopher J. Rutland, *University of Wisconsin-Madison* (11, 2, p. 378) Article based on AIAA Paper 93-2952

B95-050 Method for Estimating Various Operating States in a Single-Stage Axial Compressor. H. Wang, D. K. Hennecke, A. König, P. Windirsch, and M. Glesner, *Darmstadt University of Technology, Germany* (11, 2, p. 385) Technical Note based on AIAA Paper 93-1872

B95-051 Shockless Transition from Supersonic to Subsonic Flow. E. William Beans, *University of Toledo* (11, 2, p. 387) Technical Note

B95-052 Numerical Studies on Droplet Breakup Models. Y. M. Kim, *Hanyang University, Korea*; H. M. Shang and C. P. Chen, *University of Alabama in Huntsville*; and T. S. Wang, *NASA Marshall Space Flight Center* (11, 2, p. 389) Technical Note

B95-053 Geometry and Flow Influences on Jet Mixing in a Cylindrical Duct. M. S. Hatch, W. A. Sowa, and G. S. Samuelsen, *University of California, Irvine*; and J. D. Holdeman, *NASA Lewis Research Center* (11, 3, p. 393) Article based on AIAA Paper 92-0773

B95-054 Performance Variation of Scramjet Nozzle at Various Nozzle Pressure Ratios. Tetsuo Hiraiwa, Sadatake Tomioka, Shuichi Ueda, and Tohru Mitani, *National Aerospace Laboratory, Japan*; and Masahiko Yamamoto and Masashi Matsumoto, *Ishikawajima-Harima Heavy Industries, Japan* (11, 3, p. 403) Article

B95-055 Investigation of Scramjet Injection Strategies for High Mach Number Flows. D. W. Riggins, *University of Missouri-Rolla*; C. R. McClinton and R. C. Rogers, *NASA Langley Research Center*; and R. D. Bittner, *Analytical Services and Materials, Inc.* (11, 3, p. 409) Article based on AIAA Paper 92-3287

B95-056 Vortex Generation and Mixing in Three-Dimensional Supersonic Combustors. D. W. Riggins, *University of Missouri-Rolla*; and P. H. Vitt, *Analytical Services and Materials, Inc.* (11, 3, p. 419) Article based on AIAA Paper 93-2144

B95-057 Thrust Vectoring Control from Convergent Nozzles with Translating Side Wall. Kenneth C. Cornelius and Gerald A. Lucius, *Wright State University* (11, 3, p. 427) Article based on AIAA Paper 93-3261

B95-058 Inviscid Analysis of Transonic Oscillating Cascade Flows Using a Dynamic Mesh Algorithm. C.-J. Hwang and S. Y. Yang, *National Cheng Kung University, Taiwan, ROC* (11, 3, p. 433) Article based on AIAA Paper 94-0146

B95-059 Hypersonic Turbulent Expansion-Corner Flow with Shock Impingement. Kung-Ming Chung and Frank K. Lu, *University of Texas at Arlington* (11, 3, p. 441) Article based on AIAA Paper 92-5101

B95-060 Assessment of a Three-Variable Reduced Kinetic Scheme in Prescribed Turbulence. Sanjay M. Correa, *General Electric Corporate R&D Center* (11, 3, p. 448) Article

B95-061 Suppression of Combustion Instability by Geometrical Design of the Bluff-Body Stabilizer. E. J. Gutmark and K. C. Schadow, *Naval Air Warfare Center Weapons Division*; and M. N. R. Nina and G. P. A. Pita, *Instituto Superior Tecnico, Portugal* (11, 3, p. 456) Article based on AIAA Paper 90-1966

B95-062 Flows in a Curved Combustor Inlet with and Without a Guide Vane. Tong-Miin Liou and Chin-Chun Liao, *National Tsing Hua University, Taiwan, ROC* (11, 3, p. 464) Article

B95-063 Computation of Turbulent Reacting Flow in a Solid-Propellant Ducted Rocket. Yei-Chin Chao, Wen-Fuh Chou, and Sheng-Shyang Liu, *National Cheng Kung University, Taiwan, ROC* (11, 3, p. 473) Article

B95-064 Controlling Mechanisms of Ignition of Solid Fuel in a Sudden-Expansion Combustor. Jing-Tang Yang and Cliff Y. Y. Wu, *National Tsing Hua University, Taiwan, ROC* (11, 3, p. 483) Article

B95-065 Solid Rocket Motor Internal Flow During Ignition. W. A. Johnston, *The Aerospace Corporation* (11, 3, p. 489) Article

based on AIAA Paper 91-1655

B95-066 Evaluation of the Transient Operation of Advanced Gas Turbine Combustors. Thomas J. Rosfjord and Jeffrey M. Cohen, *United Technologies Research Center* (11, 3, p. 497) Article

B95-067 Analysis and Testing of Propellant Feed System Priming Process. T. Y. Lin, *McDonnell Douglas Aerospace*; and D. Baker, *NASA Johnson Space Flight Center* (11, 3, p. 505) Article based on AIAA Paper 92-3315

B95-068 Rocket Engine Coaxial Injector Liquid/Gas Interface Flow Phenomena. Wolfgang Mayer and Gerd Krülle, *DLR, German Aerospace Research Establishment* (11, 3, p. 513) Article based on AIAA Paper 92-3389

B95-069 Gravity Effects on the Dynamics of Evaporating Droplets in a Heated Jet. T. W. Park and S. K. Aggarwal, *University of Illinois at Chicago*; and V. R. Katta, *System Research Laboratory, Inc.* (11, 3, p. 519) Article

B95-070 Vortex Formation in a Proposed Detonation Internal Combustion Engine. Eric Loth, *University of Illinois at Urbana-Champaign* (11, 3, p. 529) Article based on AIAA Paper 92-3171

B95-071 Laser-Powered Heat Exchanger Rocket for Ground-to-Orbit Launch. Jordin T. Kare, *Lawrence Livermore National Laboratory* (11, 3, p. 535) Article

B95-072 Gasdynamic Fusion Propulsion System for Space Exploration. Terry Kammash and Myoung-Jae Lee, *University of Michigan* (11, 3, p. 544) Article

B95-073 Solar Radiation on Mars: Stationary Photovoltaic Array. J. Appelbaum, *NASA Lewis Research Center*; I. Sherman, *Tel-Aviv University, Israel*; and G. A. Landis, *W. J. Schaffer Associates* (11, 3, p. 554) Article

B95-074 Hydrogen Peroxide as an Alternate Oxidizer for a Hybrid Rocket Booster. M. C. Ventura, *Rockwell International*; and S. D. Heister, *Purdue University* (11, 3, p. 562) Technical Note based on AIAA Paper 93-2411

B95-075 Effects of the Chemical Reaction Model on Calculations of Supersonic Combustion Flows. Corin Segal, Hossein Haj-Hariri, and James C. McDaniel, *University of Virginia* (11, 3, p. 565) Technical Note

B95-076 Current Distribution on Isothermal Rod Electrodes in Combustion MHD Generators. Richard P. Heydt, *SRI International* (11, 3, p. 568) Technical Note

B95-077 Combustion Performance of Bipropellant Liquid Rocket Engine Combustors with Fuel-Impingement Cooling. Tsung Leo Jiang and Wei-Tang Chiang, *National Cheng Kung University, Taiwan, ROC*; and Shyh-Dihng Jang, *Chung Shan Institute of Science and Technology, Taiwan, ROC* (11, 3, p. 570) Technical Note

B95-078 Efficient Mapping Topology for Turbine Combustors with Inclined Slots/Staggered Holes. S. L. Yang, *Michigan Technological University*; and M. C. Cline, *Los Alamos National Laboratory* (11, 3, p. 572) Technical Note

B95-079 Fresh Approach to Solid Rocket Motor Design. I. I. Velichko, N. A. Obukhov, and V. S. Shishkin, *National Rocket Center, Russia* (11, 4, p. 579) Article

B95-080 Two-Phase Flows in the Nozzles of Solid Rocket Motors. I. M. Vasin and R. K. Narimanov, *Tomsk State University, Russia*; and A. A. Glazunov, N. E. Kuvshinov, and V. A. Ivanov, *Research Institute of Applied Mathematics and Mechanics, Russia* (11, 4, p. 583) Article

B95-081 Analysis of Multidimensional and Two-Phase Flows in Solid Rocket Motors. Sergei S. Bondarchuk, Aleksander B. Vorozhtsov, Evgenii A. Kozlov, and Yuri V. Feshchenko, *Research Institute of Applied Mathematics and Mechanics, Russia* (11, 4, p. 593) Article

B95-082 Numerical Simulations of Injection-Driven Flows in a Two-Dimensional Nozzleless Solid-Rocket Motor. Tong-Miin Liou and Wan-Yih Lien, *National Tsing Hua University, Taiwan, ROC* (11, 4, p. 600) Article

B95-083 Effects of Vorticity on Rocket Combustion Stability. G. A. Flandro, *University of Tennessee Space Institute* (11, 4, p. 607) Article

B95-084 Vortex-Shedding Phenomena in Solid Rocket Motors. François Vuillot, *ONERA, France* (11, 4, p. 626) Article

B95-085 Effects of Acoustic Oscillations on Flame Dynamics of Homogeneous Propellants in Rocket Motors. Tae-Seong Roh, I-Shih Tseng, and Vigor Yang, *Pennsylvania State University* (11, 4, p. 640) Article

B95-086 High-Frequency Instability of Combustion in Solid Rocket Motors. Nikolai M. Pivkin and Nikolai M. Pelykn, *Research Institute of Polymeric Materials, Russia* (11, 4, p. 651) Article

B95-087 Pulsed Instabilities in Solid-Propellant Rockets. F. E. C. Culick, V. Burnley, and G. Swenson, *California Institute of Technology* (11, 4, p. 657) Article

B95-088 Analysis of Elementary Models for the Steady-State Combustion of Solid Propellants. V. A. Strunin and G. B. Manelis, *Institute of Chemical Physics in Chernogolovka, Russia* (11, 4, p. 666) Article

B95-089 Combustion of Energetic Azide Polymers. Namino-suke Kubota, *Japan Defense Agency* (11, 4, p. 677) Article

B95-090 Development of Gas-Phase Reaction Mechanisms for Nitramine Combustion. R. A. Yetter, F. L. Dryer, M. T. Allen, and J. L. Gatto, *Princeton University* (11, 4, p. 683) Article

B95-091 Study of the Gas-Phase Chemistry of RDX: Experiments and Modeling. Thomas A. Litzinger, Barry L. Fetherolf, YoungJoo Lee, and Ching-Jen Tang, *Pennsylvania State University* (11, 4, p. 698) Article

B95-092 Structure and Chemical Kinetics of Flames Supported by Solid Propellant Combustion. Joseph J. Cor and Melvyn C. Branch, *University of Colorado* (11, 4, p. 704) Article

B95-093 Effect of Multidimensional Flamelets in Composite Propellant Combustion. Edward W. Price, *Georgia Institute of Technology* (11, 4, p. 717) Article

B95-094 Analysis of RDX Monopropellant Combustion with Two-Phase Subsurface Reactions. Yeong-Cherng Liau and Vigor Yang, *Pennsylvania State University* (11, 4, p. 729) Article

B95-095 Multiphase Chemistry Considerations at the Surface of Burning Nitramine Monopropellants. Thomas B. Brill, *University of Delaware* (11, 4, p. 740) Article

University of Delaware (11, 4, p. 740) Article

B95-096 HMX and RDX: Combustion Mechanism and Influence on Modern Double-Base Propellant Combustion. Anatoli Zenin, *Russian Academy of Sciences* (11, 4, p. 752) Article

B95-097 Effects of Two-Phase Flow on the Deflagration of Porous Energetic Materials. Stephen B. Margolis, *Sandia National Laboratories*; and Forman A. Williams, *University of California, San Diego* (11, 4, p. 759) Article

B95-098 Dynamics of Aluminum Combustion. Kristen P. Brooks and Merrill W. Beckstead, *Brigham Young University* (11, 4, p. 769) Article

B95-099 Hot Fragment Conductive Ignition of Nitramine-Based Propellants. T. H. Huang, S. T. Thynell, and K. K. Kuo, *Pennsylvania State University* (11, 4, p. 781) Article

B95-100 Modeling of Combustion of Energetic Materials with Chemically Induced Mechanical Processes. A. G. Knyazeva, *Tomsk State University, Russia*; and V. E. Zarko, *Institute of Chemical Kinetics and Combustion, Russia* (11, 4, p. 791) Article

B95-101 Intrinsic Combustion Instability of Solid Energetic Materials. L. DeLuca, R. Di Silvestro, and F. Cozzi, *Politecnico di Milano, Italy* (11, 4, p. 804) Article

B95-102 Ignition of Energetic Materials Under Conditions of Complex Heat Exchange. Vadim V. Barzykin and Alexander G. Merzhanov, *Russian Academy of Sciences* (11, 4, p. 816) Article

B95-103 Magnetic Field Control of Burning Rate and Thrust in Solid Rocket Motors. Igor G. Borovskoi and Alexander B. Vorozhtsov, *Research Institute of Applied Mathematics and Mechanics, Russia* (11, 4, p. 824) Article

B95-104 Design Principles of Advanced Solid Propellants. G. V. Sakovich, *Altai Research and Production Organization, Russia* (11, 4, p. 830) Article

B95-105 Development of Energetic Additives for Propellants in China. Yuxiang Ou, Boren Chen, Hong Yan, Huiping Jia, Jianjun Li, and Shuan Dong, *Beijing Institute of Technology, PRC* (11, 4, p. 838) Article

B95-106 High Energy Material Research and Development in India. Haridwar Singh, *Explosives Research and Development Laboratory, India* (11, 4, p. 848) Article

B95-107 High-Performance Propellants Based on Hydrazinium Nitroformate. H. F. R. Schöyer and A. J. Schnorhk, *ESA/ESTEC, The Netherlands*; P. A. O. G. Korting and P. J. van Lit, *Aerospace Propulsion Products, The Netherlands*; and J. M. Mul, G. M. H. J. L. Gadiot, and J. J. Meulenbrugge, *Prins Maurits Laboratory TNO, The Netherlands* (11, 4, p. 856) Article

B95-108 Energetic Insensitive Propellants for Solid and Ducted Rockets. Gérard Doriath, *SNPE-CRB, France* (11, 4, p. 870) Article

B95-109 Mixing Analysis of Axially Opposed Rows of Jets Injected into Confined Crossflow. D. B. Bain and C. E. Smith, *CFD Research Corporation*; and J. D. Holdeman, *NASA Lewis Research Center* (11, 5, p. 885) Article

B95-110 Numerical Analysis of the Flowfields in a Staged Gas Turbine Combustor. Michael C. Cline, *Los Alamos National Laboratory*; Gerald J. Micklow, *University of Florida*; S. L. Yang,

Michigan Technological University; and H. Lee Nguyen, *NASA Lewis Research Center* (11, 5, p. 894) Article

B95-111 Numerical Simulations of Flows in Centrifugal Turbomachinery. Daniel J. Dorney and Roger L. Davis, *United Technologies Research Center*; and Dennis K. McLaughlin, *Pennsylvania State University* (11, 5, p. 899) Article based on AIAA Paper 93-2578

B95-112 Comparison Between Numerically Modeled and Experimentally Measured Wave-Rotor Loss Mechanisms. Daniel E. Paxson, *NASA Lewis Research Center* (11, 5, p. 908) Article based on AIAA Paper 93-2522

B95-113 Stall Inception in a Multistage High-Speed Axial Compressor. Donald A. Hoying, *U.S. Air Force Wright Laboratory* (11, 5, p. 915) Article based on AIAA Paper 93-2386

B95-114 Flutter Stability of a Detuned Cascade in Subsonic Compressible Flow. Scott Sawyer and Sanford Fleeter, *Purdue University* (11, 5, p. 923) Article based on AIAA Paper 94-0144

B95-115 Thrust Characteristics of a Supersonic Mixer Ejector. T. G. Tillman, *United Technologies Research Center*; and W. M. Presz Jr., *Western New England College* (11, 5, p. 931) Article based on AIAA Paper 93-4345

B95-116 Influence of Boundary-Layer Transition on Measured Incipient Separation Angles. Donald Frew, Lello Galassi, and Donald Stava, *U.S. Air Force Wright Laboratory*; and David Azevedo, *Pratt and Whitney Aircraft, United Technologies Corporation* (11, 5, p. 938) Article

B95-117 Approach to In Situ Analysis of Scramjet Combustor Behavior. William O. T. Peschke, *United Technologies Research Center* (11, 5, p. 943) Article based on AIAA Paper 93-2328

B95-118 Analysis of Air-Turborocket Performance. Giuseppe Bussi, Guido Colasurdo, and Dario Pastrone, *Politecnico di Torino, Italy* (11, 5, p. 950) Article based on AIAA Paper 93-1982

B95-119 Characteristics of a Velocity-Modulated Pressure-Swirl Atomizing Spray. Fumiaki Takahashi and W. John Schmoll, *University of Dayton*; and John L. Dressler, *Fluid Jet Associates* (11, 5, p. 955) Article based on AIAA Paper 94-0558

B95-120 Thermohydrodynamic Analysis of Fluid Film Bearings for Cryogenic Applications. Luis San Andres, *Texas A&M University* (11, 5, p. 964) Article

B95-121 Crack Growth Resistance Due to Shot Peening in Carburized Gears. Katsumi Inoue and Masana Kato, *Tohoku University, Japan* (11, 5, p. 973) Article based on AIAA Paper 94-2935

B95-122 Feasibility Demonstration of Cryogenic Fluid Gauging for Space Vehicle Applications. A. C. Rogers, F. Dodge, and K. A. Behring, *Southwest Research Institute* (11, 5, p. 980) Article based on AIAA Paper 93-1801

B95-123 Design and Development of a Large Bipropellant Blowdown Propulsion System. H. C. Hearn, *Lockheed Martin Corporation* (11, 5, p. 986) Article based on AIAA Paper 93-2118

B95-124 Test Experience, 490-N High-Performance [321-s Specific Impulse] Engine. L. Schoenman, S. D. Rosenberg, and D. M. Jassowski, *Aerojet* (11, 5, p. 992) Article based on AIAA Paper 92-3800

B95-125 Flow-Structural Interaction Inside a Solid Rocket

Motor During Ignition Transient. W. A. Johnston and J. W. Murdock, *The Aerospace Corporation* (11, 5, p. 998) Article

B95-126 Solid Rocket Motor Grain Burnback Analysis Using Adaptive Grids. R. J. Hejl and S. D. Heister, *Purdue University* (11, 5, p. 1006) Article based on AIAA Paper 94-3330

B95-127 Slag Accumulation in the Titan Solid Rocket Motor Upgrade. W. A. Johnston, J. W. Murdock, S. Koshigoe, and P. T. Than, *The Aerospace Corporation* (11, 5, p. 1012) Article based on AIAA Paper 94-3287

B95-128 Investigation of Stabilized Resonant Cavity Microwave Plasmas for Propulsion. Philip Balaam and Michael M. Micci, *Pennsylvania State University* (11, 5, p. 1021) Article

B95-129 Flow Instability in Plane-Parallel Particle Beds with Constant Volumetric Heating. J. L. Kerrebrock and J. Kalamas, *Massachusetts Institute of Technology* (11, 5, p. 1028) Article based on AIAA Paper 93-1758

B95-130 Analysis of Free-Piston Stirling Engine/Linear Alternator Systems Part 1: Theory. G. Benvenuto, *University of Genoa, Italy*; and F. de Monte, *University of L'Aquila, Italy* (11, 5, p. 1036) Article

B95-131 Analysis of Free-Piston Stirling Engine/Linear Alternator Systems Part 2: Results. G. Benvenuto, *University of Genoa, Italy*; and F. de Monte, *University of L'Aquila, Italy* (11, 5, p. 1047) Article

B95-132 In-Situ-Produced Methane and Methane/Carbon Monoxide Mixtures for Return Propulsion from Mars. Thomas A. Sullivan, Diane Linne, Lee Bryant, and Kriss Kennedy, *NASA Johnson Space Flight Center* (11, 5, p. 1056) Article based on AIAA Paper 94-2846

B95-133 Planetary Flight. Kent L. Miller, *Taiwan, ROC* (11, 5, p. 1063) Article

B95-134 Function Approximation Approach to Anomaly Detection in Propulsion System Test Data. Bruce A. Whitehead, *University of Tennessee Space Institute*; and W. Andes Hoyt, *ERC, Inc.* (11, 5, p. 1074) Technical Note based on AIAA Paper 93-1776

B95-135 Numerical Analysis of Base Flowfield for a Four-Engine Clustered Nozzle Configuration. Ten-See Wang, *NASA Marshall Space Flight Center* (11, 5, p. 1076) Technical Note based on AIAA Paper 93-1923

B95-136 Beam Waist/Focus Misalignment Error Estimates in Laser Doppler Anemometry. Clinton L. Dancey and Jeffrey Hetmanski, *Virginia Polytechnic Institute and State University* (11, 5, p. 1078) Technical Note

B95-137 New Supersonic Combustion Research Facility. M. R. Gruber and A. S. Nejad, *U.S. Air Force Wright Laboratory* (11, 5, p. 1080) Technical Note based on AIAA Paper 94-0544

B95-138 Planar Measurement of Absolute OH Concentration Distributions in a Supersonic Combustion Tunnel. T. M. Quagliaroli, G. Laufer, R. H. Krauss, and J. C. McDaniel Jr., *University of Virginia* (11, 5, p. 1083) Technical Note based on AIAA Paper 93-0042

B95-139 New Stabilizers for Double-Base Propellants. Adly A.-W. Soliman, A. A. El-Damaty, and M. A. M. Hassan, *National Institute for Standards, Egypt* (11, 5, p. 1086) Technical Note

- B95-140 Hypervelocity Scramjet Mixing Enhancement.** D. M. Bushnell, *NASA Langley Research Center* (11, 5, p. 1088) Technical Note
- B95-141 Structure of a Swirl-Stabilized Combusting Spray.** Daniel L. Bulzan, *NASA Lewis Research Center* (11, 6, p. 1093) Article
- B95-142 Experimental Study of Liquid Sheets Formed in Coaxial Swirl Injectors.** K. Ramamurthi and T. John Tharakan, *Liquid Propulsion Systems Centre, India* (11, 6, p. 1103) Article
- B95-143 Structure of a Swirl-Stabilized Spray Flame Relevant to Gas Turbine and Furnaces.** Kyeong Lee and Behrouz Chehroudi, *University of Illinois at Chicago* (11, 6, p. 1110) Article
- B95-144 Mixing Characteristics of Twin Impinging Circular Jets.** P. J. Disimile, *University of Cincinnati*; and E. Savory and N. Toy, *University of Surrey, England, UK* (11, 6, p. 1118) Article
- B95-145 Ignition of Boron Particles Coated by a Thin Titanium Film.** Valery Rosenband, Benveniste Natan, and Alon Gany, *Technion—Israel Institute of Technology* (11, 6, p. 1125) Article
- B95-146 Assumed and Evolution Probability Density Functions in Supersonic Turbulent Combustion Calculations.** R. A. Baurle, *North Carolina State University*; A. T. Hsu, *NYMA, Inc.*; and H. A. Hassan, *North Carolina State University* (11, 6, p. 1132) Article based on AIAA Paper 94-3180
- B95-147 Supersonic Combustion Ramjet Missile.** Frederick S. Billig, *Johns Hopkins University* (11, 6, p. 1139) Article based on AIAA Paper 93-2329
- B95-148 Supersonic Flow Mixing and Combustion Using Ramp Nozzle.** Ken H. Yu, Klaus C. Schadow, Karl J. Kraeutle, and Effie J. Gutmark, *U.S. Naval Air Warfare Center* (11, 6, p. 1147) Article
- B95-149 Measurements of OH and H₂O for Reacting Flow in a Supersonic Combusting Ramjet Combustor.** Terence E. Parker, Mark G. Allen, Richard R. Foutter, David M. Sonnenfroh, and W. Terry Rawlins, *Physical Sciences, Inc.* (11, 6, p. 1154) Article
- B95-150 Effect of Dilution Air on the Scalar Flowfield at Combustor Sector Exit.** A. Gulati, A. Tolpadi, and G. VanDeusen, *General Electric Corporate R&D Center*, and D. Burrus, *General Electric Aircraft Engines* (11, 6, p. 1162) Article based on AIAA Paper 94-0221
- B95-151 Laminar Flow Rotor for a Radial Inflow Turbine.** I. Huntsman and H. P. Hodson, *University of Cambridge, England, UK* (11, 6, p. 1170) Article based on AIAA Paper 93-1796
- B95-152 Three-Dimensional Navier–Stokes Heat Transfer Predictions for Turbine Blade Rows.** R. J. Boyle, *NASA Lewis Research Center*; and P. W. Giel, *Sverdrup Technology, Inc.* (11, 6, p. 1179) Article based on AIAA Paper 92-3068
- B95-153 Simulation of Laminar–Turbulent Transition with an Explicit Navier–Stokes Flow Solver.** Lyle D. Dailey and Ian K. Jennions, *General Electric Aircraft Engines*; and Paul D. Orkwis, *University of Cincinnati* (11, 6, p. 1187) Article based on AIAA Paper 94-0189
- B95-154 Simplified Approach for Control of Rotating Stall Part 1: Theoretical Development.** O. O. Badmus, S. Chowdhury, K. M. Eveker, C. N. Nett, and C. J. Rivera, *Georgia Institute of Technology* (11, 6, p. 1195) Article based on AIAA Paper 93-2229
- B95-155 Simplified Approach for Control of Rotating Stall Part 2: Experimental Results.** O. O. Badmus, S. Chowdhury, K. M. Eveker, C. N. Nett, and C. J. Rivera, *Georgia Institute of Technology* (11, 6, p. 1210) Article based on AIAA Paper 93-2234
- B95-156 Experimental Studies into Hail Impact Characteristics.** P. M. Render and H. Pan, *Loughborough University of Technology, England, UK* (11, 6, p. 1224) Article based on AIAA Paper 93-2174
- B95-157 Shock-Wave/Boundary-Layer Interactions with Bleed Part 1: Effect of Slot Angle.** A. Hamed, J. J. Yeuan, and S. H. Shih, *University of Cincinnati* (11, 6, p. 1231) Article based on AIAA Paper 93-2155
- B95-158 Shock-Wave/Boundary-Layer Interactions with Bleed Part 2: Effect of Slot Location.** A. Hamed, J. J. Yeuan, and S. H. Shih, *University of Cincinnati* (11, 6, p. 1236) Article based on AIAA Paper 93-2992
- B95-159 Effects of Body-Side Compression on Forward-Swept Sidewall Compression Inlets.** Patrick E. Rodi, *NASA Langley Research Center* (11, 6, p. 1242) Article based on AIAA Paper 93-3125
- B95-160 Installed F/A-18A Inlet Flow Calculations: A Grid Study.** C. Frederic Smith and Steve D. Podleski, *NYMA, Inc.* (11, 6, p. 1250) Article based on AIAA Paper 94-3213
- B95-161 Model Reference Adaptive Fuzzy Control System on an Aeroengine.** Wu Chi-Hua and Luo En-Ke, *Northwestern Polytechnic University, PRC* (11, 6, p. 1257) Article
- B95-162 4000°F Materials for Low-Thrust Rocket Engines.** Len Schoenman, *Aerojet* (11, 6, p. 1261) Article based on AIAA Paper 93-2406
- B95-163 Design Studies of the Advanced Technology Engine.** H. F. R. Schöyer, *European Space Agency, The Netherlands*; M. Caporicci, *European Space Agency, France*; and B. Hufenbach and A.-J. Schnorhk, *European Space Agency, The Netherlands* (11, 6, p. 1268) Article based on AIAA Paper 92-3662
- B95-164 Life Prediction of the Thrust Chamber Wall of a Reusable Rocket Engine.** Xiaowen Dai and Asok Ray, *Pennsylvania State University* (11, 6, p. 1279) Article
- B95-165 Delta Improvement Study: Hydrogen Upper Stage.** James A. Martin and Jesse F. Stewart, *University of Alabama* (11, 6, p. 1288) Article
- B95-166 Feedback-Controlled Gas Mixing System for the Ram Accelerator.** M. R. Jardin and A. P. Bruckner, *University of Washington* (11, 6, p. 1291) Article based on AIAA Paper 94-0016
- B95-167 Use of Jet Interaction for Ignition in Ram and External Propulsion Accelerators.** Julius Brandeis, *Stanford University* (11, 6, p. 1299) Article
- B95-168 Laser Propulsion 10-kW Thruster Test Program Results.** J. Black and H. Krier, *Combustion Sciences, Inc.*; and R. J. Glumb, *TRW Space and Technology Group* (11, 6, p. 1307) Article
- B95-169 Two-Dimensional Numerical Model of Plasma Flow in a Hall Thruster.** Kimiya Komurasaki, *Nagoya University, Japan*; and Yoshihiro Arakawa, *University of Tokyo, Japan* (11, 6, p. 1317) Article

B95-170 Dynamic Modeling of High-Speed Aircraft Generators During Forced Power Transfer Operation. A. A. Arkadan and R. H. VanderHeiden, *Marquette University*; and J. F. Defenbaugh, *Sundstrand Aerospace* (11, 6, p. 1324) Article

B95-171 Prototypic Magnetohydrodynamic Anode Designs and Test Results. C. C. P. Pian, S. W. Petty, E. W. Schmitt, and L. C. Farrar, *Textron Defense Systems* (11, 6, p. 1330) Article

B95-172 Hydrogen Corrosion Considerations of Carbide Fuels for Nuclear Thermal Propulsion Applications. Dennis G. Pelaccio and Mohamed S. El-Genk, *University of New Mexico*; and Darryl P. Butt, *Los Alamos National Laboratory* (11, 6, p. 1338) Article

B95-173 Studies of Helical Magnetohydrodynamic Seawater Flow in Fields up to Twelve Teslas. T. F. Lin and J. B. Gilbert, *Pennsylvania State University* (11, 6, p. 1349) Article

B95-174 Mars Sample Return Mission with In-Situ Resource

Utilization. K. R. Sridhar, *University of Arizona* (11, 6, p. 1356) Article

B95-175 Stall Inception in Single-Stage, Transonic Compressors with Straight and Swept Leading Edges. K. M. Boyer, P. I. King, and W. W. Copenhaver, *U.S. Air Force Institute of Technology* (11, 6, p. 1363) Technical Note based on AIAA Paper 93-1870

B95-176 One-Dimensional, Equilibrium-Chemistry Ram Accelerator Performance Calculations. Federico Liberatore, *U.S. Army Research Laboratory* (11, 6, p. 1366) Technical Note

B95-177 Performance Comparisons of Low-Power Arcjets. W. D. Deininger, G. Cruciani, and M. J. Glogowski, *BPD Difesa e Spazio, Italy* (11, 6, p. 1368) Technical Note

B95-178 Analysis of Ignition and Flame Spreading in Solid Rocket Motor Star Slots. A. Ciucci, Rhonald M. Jenkins, and Winfred A. Foster Jr., *Auburn University* (11, 6, p. 1371) Technical Note