2008 Journal of Propulsion and Power Index

How to Use the Index

In the Subject Index, pages 1424–1429, each technical paper is listed under a maximum of three appropriate headings. Note the locating number in boldface type preceding each paper title, and use that number to find the paper in the Chronological Index. The Author Index, pages 1430–1431, lists all authors associated with a given technical paper. The locating numbers are identical to those in the Subject Index. The Chronological Index, pages 1432–1437, also lists all papers by their locating numbers. This listing contains titles, authors and their affiliations, and volume, issue number, and page where the paper appeared. It also gives the AIAA paper number, if any, on which the article was based. Comments, Replies, and Errata are listed directly beneath the paper to which they refer. If the paper to which they refer was published prior to 2008, that paper also will appear in both the Subject and Chronological Indexes. Authors of Comments also are listed in the Author Index.

Subject Index

AIRCRAFT TECHNOLOGY, CONVENTIONAL, STOL/VTOL

Aerodynamics

B08-051 Loss Mechanisms of High-Turning Supercritical Compressor Cascades

B08-155 Flow Structure of Short-Length-Scale Disturbance in an Axial-Flow Compressor

B08-143 Survey of Aerodynamic Drag Reduction at High Speed by Energy Deposition

B08-036 Strongly Swirling Turbulent Sink Flow Between Two Stationary Disks

Airframe-Propulsion Integration

B08-042 Wave Reverberations in Multitube Pulse Detonation Engines

B08-075 Infrared Signature Suppression of Helicopter Engine Duct Based on "Conceal and Camouflage"

Flow Control

B08-115 High-Speed Magnetohydrodynamic Flow Control Analyses with Three-Dimensional Simulations

B08-111 Virtual Shapes in Supersonic Flow Control with Energy Addition

B08-088 Passive Control Techniques to Alleviate Supersonic Cavity Flow Oscillation

B08-145 Nanosecond-Pulsed Discharges for Plasma-Assisted Combustion and Aerodynamics B08-144 Near-Surface Electrical Discharge in Supersonic Airflow: Properties and Flow Control B08-114 Single-Dielectric Barrier Discharge Plasma Enhanced Aerodynamics: Concepts, Optimization, and Applications

B08-113 Hypersonic Flow Control Using Surface Plasma Actuator

B08-112 Numerical Simulation of Direct Current Glow Discharges for High-Speed Flow Control

Fuels and Fuel Systems

B08-076 Application of a Composition-Explicit Distillation Curve Metrology to Mixtures of Jet-A and S-8

B08-098 Hydrocarbon Fuel Flash Vaporization for Pulsed Detonation Combustion

General Aviation

B08-148 Atmospheric Cruise Flight Challenges for Hypersonic Vehicles Under the Ajax Concept

Noise

B08-054 Aerodynamics of Fan Flow Deflectors for Jet Noise Suppression

Propeller and Rotor Systems

B08-139 Ducted Wind/Water Turbines and Propellers Revisited

B08-156 Simulation of Icing on a Cascade of Stator Blades

Simulation

B08-077 Implications of Day Temperature for a High-Pressure-Turbine Blade's Low-Cycle-Fatigue Life Consumption

Stealth

B08-075 Infrared Signature Suppression of Helicopter Engine Duct Based on "Conceal and Camouflage"

Vibration

B08-093 Increasing Gas Turbine Blade Damping Through Cavities Filled with Viscoelastic Materials

Weather Hazards

B08-156 Simulation of Icing on a Cascade of Stator Blades

ENERGY

Alternate Fuels

B08-070 Compact Reverse Water-Gas-Shift Reactor for Extraterrestrial In Situ Resource Utilization

Biomass and Waste Fuels

B08-073 Effect of Biodiesel Fuel on Direct Injection Diesel Engine Performance

Conservation

B08-166 Characterization of an Acoustically Self-Excited Combustor for Spray Evaporation

Fuel Cells

B08-071 Hydrogen-Peroxide-Based Fuel Cells for Space Power Systems

Hydrogen and Unique Fuels

B08-071 Hydrogen-Peroxide-Based Fuel Cells for Space Power Systems

B08-090 Computational Study on the Critical Nozzle Flow of High-Pressure Hydrogen Gas

Photovoltaic Power

B08-122 Solar Cell Modeling and Parameter Optimization Using Simulated Annealing

Power Conditioning

B08-040 Testing of a 250-Kilowatt Fault-Tolerant Permanent Magnet Power Generation System for Large Civil Aeroengines

Reciprocating Machinery

B08-073 Effect of Biodiesel Fuel on Direct Injection Diesel Engine Performance

Rotating Machinery

B08-134 Flow Study of a Redesigned High-Pressure-Ratio Centrifugal Compressor

B08-035 Real-Gas Effects in Organic Rankine Cycle Turbine Nozzles

B08-133 Desensitization of the Flowfield from Rotor Tip-Gap Height by Casing-Air Injection

Thermoelectric

B08-044 Thermoelectric Properties of Iron-and Lanthanum-Doped CoSb3 Compounds by Pulse Discharge Sintering

B08-043 Thermoelectric Properties of β -Zn₄Sb₃ Synthesized by Mechanical Alloying and Pulse Discharge Sintering

FLUID DYNAMICS

Aeroacoustics

B08-169 Exact Navier-Stokes Solution for the Pulsatory Viscous Channel Flow with Arbitrary Pressure Gradient

B08-054 Aerodynamics of Fan Flow Deflectors for Jet Noise Suppression

B08-088 Passive Control Techniques to Alleviate Supersonic Cavity Flow Oscillation

Boundary Layers and Heat Transfer: Laminar

B08-062 Prediction of the Efficiency of Acoustic Damping Cavities

Boundary Layers and Heat Transfer: Turbulent

B08-049 Low-Heat-Load-Vane Profile Optimization, Part 2: Short-Duration Shock-Tunnel Experiments

Boundary-Layer Stability and Transition

B08-152SpanwiseWakeandDiscreteJetDisturbances on a Separating Turbine BladeB08-028Boundary-LayerEffectsonInternalFlowChokinginDual-ThrustSolidRocket

Motors **B08-052** Experimental Investigation of Unsteady Transition Processes on High-Lift T106A Turbine

Computational Fluid Dynamics

B08-035 Real-Gas Effects in Organic Rankine Cycle Turbine Nozzles

B08-038 Examination of a Collision-Limiter Direct Simulation Monte Carlo Method for Micropropulsion Applications

B08-115 High-Speed Magnetohydrodynamic Flow Control Analyses with Three-Dimensional Simulations

B08-048 Low-Heat-Load-Vane Profile Optimization, Part 1: Code Validation and Airfoil Redesign

B08-001 Turbulence Models Assessment for Large-Scale Tip Vortices in an Axial Compressor Rotor

B08-037 Multiple Surrogate Modeling for Axial Compressor Blade Shape Optimization

B08-092 Leakage Assessment of Pressure-Exchange Wave Rotors

B08-065 Outlet-Boundary-Condition Influence for Large Eddy Simulation of Combustion Instabilities in Gas Turbines

B08-134 Flow Study of a Redesigned High-Pressure-Ratio Centrifugal Compressor

B08-136 Detached-Eddy Simulation of a Louver-Cooling Scheme for Turbine Blades

B08-131 Multiple Objective Optimization and
 Inverse Design of Axial Turbomachinery Blades
 B08-153 Detached-Eddy Simulation Procedure
 Targeted for Design

Hypersonic Flow

B08-123 Experimental Investigation of a Two-Dimensional and a Three-Dimensional Scramjet Inlet at Mach 7

B08-083 Analytical Computation of Leading-Edge Truncation Effects on Inviscid Busemann-Inlet Performance

B08-111 Virtual Shapes in Supersonic Flow Control with Energy Addition

B08-113 Hypersonic Flow Control Using Surface Plasma Actuator

B08-003 Computational Study of the Propulsive Characteristics of a Shcramjet Engine

B08-084 Experimental Study of a Scramjet Nozzle Flow Using the Pressure-Sensitive-Paint Method

Inlet, Nozzle, Diffuser, and Channel Flows

B08-083 Analytical Computation of Leading-Edge Truncation Effects on Inviscid Busemann-Inlet Performance

B08-030 Preliminary Study of Shock Train in a Curved Variable-Section Diffuser

B08-035 Real-Gas Effects in Organic Rankine Cycle Turbine Nozzles

B08-038 Examination of a Collision-Limiter Direct Simulation Monte Carlo Method for Micropropulsion Applications

B08-123 Experimental Investigation of a Two-Dimensional and a Three-Dimensional Scramjet Inlet at Mach 7

B08-079 A Starting Procedure of Supersonic Ejector to Minimize Primary Pressure Load

B08-055 Investigation of Two-Dimensional Scramjet Inlet Flowfield at Mach 7

B08-090 Computational Study on the Critical Nozzle Flow of High-Pressure Hydrogen Gas

B08-125 Limiting Contractions for Starting Simple Ramp-Type Scramjet Intakes with Overboard Spillage

B08-084 Experimental Study of a Scramjet Nozzle Flow Using the Pressure-Sensitive-Paint Method

Jets, Wakes, and Viscid-Inviscid Flow Interactions

B08-032 Flush-Wall, Diamond-Shaped Fuel Injector for High Mach Number Scramjets

B08-052 Experimental Investigation of Unsteady Transition Processes on High-Lift T106A Turbine Blades

B08-085 Complex Wall Injector Array for High-Speed Combustors

B08-152 Spanwise Wake and Discrete Jet Disturbances on a Separating Turbine Blade

B08-004 Numerical Simulation of Transverse Injection of Circular Jets into Turbulent Supersonic Streams

Multiphase Flows

B08-118 Molecular Dynamics Simulation of IonEmission from Nanodroplets of Ionic LiquidsB08-156 Simulation of Icing on a Cascade of

Stator Blades

B08-161 Inert Particles for Axial-Combustion-Instability Suppression in a Solid Rocket Motor B08-086 Effect of Liquid Injection on Acoustic

Field Induced from Supersonic Flow Past Cavities B08-031 Breakup of Aerated Liquid Jets in Subsonic Crossflow

Plasmadynamics and MHD

B08-115 High-Speed Magnetohydrodynamic Flow Control Analyses with Three-Dimensional Simulations

B08-039 Time-Resolved Measurements of Impulse Generation in Pulsed Laser-Ablative Propulsion

B08-111 Virtual Shapes in Supersonic Flow Control with Energy Addition

B08-116 Microwave Discharges and Possible Applications in Aerospace Technologies

B08-145 Nanosecond-Pulsed Discharges for Plasma-Assisted Combustion and Aerodynamics

B08-143 Survey of Aerodynamic Drag Reduction at High Speed by Energy Deposition

B08-144 Near-Surface Electrical Discharge in Supersonic Airflow: Properties and Flow Control B08-113 Hypersonic Flow Control Using Surface Plasma Actuator

B08-112 Numerical Simulation of Direct Current Glow Discharges for High-Speed Flow Control B08-146 Repetitively Pulsed Nonequilibrium Plasmas for Magnetohydrodynamic Flow Control and Plasma-Assisted Combustion

B08-107 Wear Mechanisms in Electron Sources for Ion Propulsion, 2: Discharge Hollow Cathode B08-106 Wear Mechanisms in Electron Sources for Ion Propulsion, 1: Neutralizer Hollow Cathode B08-114 Single-Dielectric Barrier Discharge Plasma Enhanced Aerodynamics: Concepts, Optimization, and Applications

Rarefied Flows

B08-121 Performance Modeling of a Coaxial Radio-Frequency Gas-Discharge Microthruster B08-038 Examination of a Collision-Limiter Direct Simulation Monte Carlo Method for Micropropulsion Applications

Reacting Flows and Combustion

B08-058 Internal Flow Dynamics in a Valveless Airbreathing Pulse Detonation Engine

B08-003 Computational Study of the Propulsive Characteristics of a Shcramjet Engine

B08-006 Concentration Distribution in Supersonic Flow Recirculation Region

B08-065 Outlet-Boundary-Condition Influence for Large Eddy Simulation of Combustion Instabilities in Gas Turbines

B08-146 Repetitively Pulsed Nonequilibrium Plasmas for Magnetohydrodynamic Flow Control and Plasma-Assisted Combustion

B08-099 Experimental and Numerical Investigation of n-Heptane/Air Counterflow Nonpremixed Flame Structure

B08-087 Flame Characteristics in Supersonic Combustor with Hydrogen Injection Upstream of Cavity Flameholder

Separated Flows

B08-114 Single-Dielectric Barrier Discharge Plasma Enhanced Aerodynamics: Concepts, Optimization, and Applications

B08-004 Numerical Simulation of Transverse Injection of Circular Jets into Turbulent Supersonic Streams

Shock Waves and Detonations

B08-103 Ablative Impulse Characteristics of Polyacetal with Repetitive CO₂ Laser Pulses

B08-058 Internal Flow Dynamics in a Valveless Airbreathing Pulse Detonation Engine

B08-041 Multicyclic-Detonation-Initiation Studies in Valveless Pulsed Detonation Combustors

Subsonic Flow

B08-139 Ducted Wind/Water Turbines and Propellers Revisited

Supersonic Flow

B08-088 Passive Control Techniques to Alleviate Supersonic Cavity Flow Oscillation

B08-087 Flame Characteristics in Supersonic Combustor with Hydrogen Injection Upstream of Cavity Flameholder B08-112 Numerical Simulation of Direct Current Glow Discharges for High-Speed Flow Control B08-079 A Starting Procedure of Supersonic Ejector to Minimize Primary Pressure Load

Transonic Flow

B08-091 Unsteady Strong Shock Interactions in a Transonic Turbine: Experimental and Numerical Analysis

Unsteady Flows

B08-133 Desensitization of the Flowfield from Rotor Tip-Gap Height by Casing-Air Injection B08-052 Experimental Investigation of Unsteady Transition Processes on High-Lift T106A Turbine Blades

B08-021 Multidimensional Numerical Simulation of Ammonium-Perchlorate-Based Propellant Combustion with Fine/Ultrafine Aluminum

B08-002 Effects of Tip Clearance on Aerodynamic Damping in a Linear Turbine Cascade

B08-027 Analysis of Injecting Wall Inclination on Segmented Solid Rocket Motor Instability

B08-092 Leakage Assessment of Pressure-Exchange Wave Rotors

B08-065 Outlet-Boundary-Condition Influence for Large Eddy Simulation of Combustion Instabilities in Gas Turbines

B08-169 Exact Navier-Stokes Solution for the Pulsatory Viscous Channel Flow with Arbitrary Pressure Gradient

B08-153 Detached-Eddy Simulation Procedure Targeted for Design

B08-091 Unsteady Strong Shock Interactions in a Transonic Turbine: Experimental and Numerical Analysis

B08-136 Detached-Eddy Simulation of a Louver-Cooling Scheme for Turbine Blades

B08-158 Study on the Operation of Pulse-Detonation Engine-Driven Ejectors

B08-157 Performance Studies of Pulse Detonation Engine Ejectors

Viscous Non-Boundary-Layer Flows

B08-011 Microgravity Geyser and Flowfield Prediction

Vortices

B08-133 Desensitization of the Flowfield from Rotor Tip-Gap Height by Casing-Air Injection B08-027 Analysis of Injecting Wall Inclination on Segmented Solid Rocket Motor Instability

B08-001 Turbulence Models Assessment for Large-Scale Tip Vortices in an Axial Compressor Rotor

B08-036 Strongly Swirling Turbulent Sink Flow Between Two Stationary Disks

Wave Motion and Sloshing

B08-169 Exact Navier-Stokes Solution for the Pulsatory Viscous Channel Flow with Arbitrary Pressure Gradient

GUIDANCE, CONTROL, AND DYNAMICS TECHNOLOGY

Engine Control

B08-124 Shock Train Leading-Edge Detection in a Dual-Mode Scramjet

INTERDISCIPLINARY TOPICS

Aerospace Technology Utilization

B08-164 Geosynchronous-Earth-Orbit Communication Satellite Deliveries with Integrated Electric Propulsion

B08-077 Implications of Day Temperature for a High-Pressure-Turbine Blade's Low-Cycle-Fatigue Life Consumption

Analytical and Numerical Methods

B08-046 Investigation of Active Flow Control on Diesel Engine Aftertreatment

B08-022 Use of Condensed-Phase Reaction Models in Combustion Simulation of Energetic Materials

Lasers and Laser Applications

B08-146 Repetitively Pulsed Nonequilibrium Plasmas for Magnetohydrodynamic Flow Control and Plasma-Assisted Combustion

Multidisciplinary Design Optimization

B08-037 Multiple Surrogate Modeling for Axial Compressor Blade Shape Optimization

B08-059 Optimal Design of Hybrid Rocket Motors for Microgravity Platform

B08-094 Exploring the Effects of Removing Process-Intrinsic Constraints on Gas Turbine Design

LAUNCH VEHICLE AND MISSILE (LV/M) TECHNOLOGY

Aerodynamics

B08-029 Experimental Study of Chin Intakes for Airbreathing Missiles with High Agility

Configuration Design

B08-028 Boundary-Layer Effects on Internal Flow Choking in Dual-Thrust Solid Rocket Motors

B08-138 Moderate-Acceleration Launch Using Repetitive-Pulse Laser Ablation in a Tube

Launch Vehicle and Sounding Rocket Systems

B08-059 Optimal Design of Hybrid Rocket Motors for Microgravity Platform

Propulsion and Propellant Systems

B08-026 Laboratory-Scale Thermal Stability Experiments on RP-1 and RP-2

B08-160 Opportunities for a Liquid Rocket Feed System Based on Electric Pumps

B08-102 Chemical Erosion of Carbon-Carbon/ Graphite Nozzles in Solid-Propellant Rocket Motors

B08-015 Testing a Helicon Double Layer Thruster Immersed in a Space-Simulation Chamber

B08-029 Experimental Study of Chin Intakes for Airbreathing Missiles with High Agility

Simulation

B08-042 Wave Reverberations in Multitube Pulse Detonation Engines

Testing, Flight and Ground

B08-029 Experimental Study of Chin Intakes for Airbreathing Missiles with High Agility

PROPULSION

Advanced Space Propulsion

B08-118 Molecular Dynamics Simulation of Ion Emission from Nanodroplets of Ionic Liquids

B08-036 Strongly Swirling Turbulent Sink Flow Between Two Stationary Disks

B08-138 Moderate-Acceleration Launch Using Repetitive-Pulse Laser Ablation in a Tube B08-117 Measurement of 30-Centimeter Ion

Thruster Discharge Cathode Erosion

B08-163 Dormant Cathode Erosion in a Multiple-Cathode Gridded Ion Thruster

B08-061 Testing and Characterization of a Hydrogen Peroxide Monopropellant Thruster

 $\begin{array}{llll} \textbf{B08-019} & Silanes/H_2O_2; & A & High-Performance \\ Synthetic & Bipropellant & for & Chemical & Space \\ Propulsion & & & & & \\ \end{array}$

B08-047 Metal-CO₂ Propulsion for Mars Missions: Current Status and Opportunities

B08-120 Numerical Analyses of Exhaust and Refill Processes of a Laser Pulse Jet

B08-165 Thrust Stand Micromass Balance for the Direct Measurement of Specific Impulse

B08-162 Laser-Assisted Combustion of Solid Propellants at Low Pressures

B08-105 Role of Superconducting Shields in Electrodynamic Propulsion

B08-017 Charged Nanoparticle Source for High Thrust Level Colloid Thruster

Airbreathing Propulsion

B08-083 Analytical Computation of Leading-Edge Truncation Effects on Inviscid Busemann-Inlet Performance

B08-051 Loss Mechanisms of High-Turning Supercritical Compressor Cascades

B08-082 Plasma-Assisted Ignition in Scramjets **B08-089** Extraction of One-Dimensional Flow Properties from Multidimensional Data Sets

B08-030 Preliminary Study of Shock Train in a Curved Variable-Section Diffuser

B08-041 Multicyclic-Detonation-Initiation Studies in Valveless Pulsed Detonation Combustors

B08-033 Dual-Mode Combustion Experiments with an Integrated Aeroramp-Injector/Plasma-Torch Igniter

B08-031 Breakup of Aerated Liquid Jets in Subsonic Crossflow

B08-008 Single-Cycle Impulse from Detonation Tubes with Nozzles

B08-135 Characterization of a Prefilming Airblast Atomizer in a Strong Swirl Flowfield

B08-139 Ducted Wind/Water Turbines and Propellers Revisited

B08-032 Flush-Wall, Diamond-Shaped Fuel Injector for High Mach Number Scramjets

B08-084 Experimental Study of a Scramjet Nozzle Flow Using the Pressure-Sensitive-Paint Method

B08-120 Numerical Analyses of Exhaust and Refill Processes of a Laser Pulse Jet

B08-095 Adaptive Estimation Algorithm for Aircraft Engine Performance Monitoring

B08-056 Experimental Studies of Pylon-Aided Fuel Injection into a Supersonic Crossflow

B08-098 Hydrocarbon Fuel Flash Vaporization for Pulsed Detonation Combustion

B08-057 Matched Pressure Injections into a Supersonic Crossflow Through Diamond-Shaped Orifices

B08-150 Investigation of Supersonic Combustion with Angled Injection in a Cavity-Based Combustor

B08-168 Combustion of Decane-Based Slurries with Metallic Fuel Additives

B08-034 Liquid-Fueled Strut-Based Scramjet Combustor Design: A Computational Fluid Dynamics Approach

B08-158 Study on the Operation of Pulse-Detonation Engine-Driven Ejectors

B08-157 Performance Studies of Pulse Detonation Engine Ejectors

B08-085 Complex Wall Injector Array for High-Speed Combustors

Combined-Cycle Engines

B08-151 Contrarotating Turbine Aerodesign for an Advanced Hypersonic Propulsion System

Combustion and Combustor Designs

B08-147 Characteristics of Gliding Arc and its Application in Combustion Enhancement

B08-100 Ignition of Iron-Coated and Nickel-Coated Aluminum Particles Under Normal- and Reduced-Gravity Conditions

B08-097 Computational Methodology for Carbon Monoxide Emission for Aeroengine Combustor Design

B08-129 Chemi-Ion-Current-Induced Dissociative Recombination in Premixed Hydrocarbon/Air Flames

B08-062 Prediction of the Efficiency of Acoustic Damping Cavities

B08-082 Plasma-Assisted Ignition in Scramjets
B08-033 Dual-Mode Combustion Experiments

with an Integrated Aeroramp-Injector/Plasma-Torch Igniter

B08-063 Resonance Frequencies and Damping of a Combustor Acoustically Coupled to an Absorber

B08-023 Combustion of Boron-Titanium Nanocomposite Powders in Different Environments

B08-096 Combustion Instability Problems Analysis for High-Pressure Jet Engine Cores

B08-045 Sight-Premixing Effects on Oxidation/ Formation of Polycyclic Aromatic Hydrocarbon in Counterflow Flames

B08-060 Burning Rate Characteristics of Ammonium Perchlorate-Based Composite Propellant Using Bimodal Ammonium Perchlorate

B08-056 Experimental Studies of Pylon-Aided Fuel Injection into a Supersonic Crossflow

B08-047 Metal-CO₂ Propulsion for Mars Missions: Current Status and Opportunities

B08-078 Nonlinear Interactions Between Forced and Self-Excited Acoustic Oscillations in Premixed Combustor

B08-162 Laser-Assisted Combustion of Solid Propellants at Low Pressures

B08-099 Experimental and Numerical Investigation of n-Heptane/Air Counterflow Nonpremixed Flame Structure

B08-130 Elevated Pressure Thermal Experiments and Modeling Studies on the Water-Gas Shift Reaction

Combustion Instability

B08-129 Chemi-Ion-Current-Induced Dissociative Recombination in Premixed Hydrocarbon/Air Flames

B08-022 Use of Condensed-Phase Reaction Models in Combustion Simulation of Energetic Materials

B08-062 Prediction of the Efficiency of Acoustic Damping Cavities

B08-167 Dynamics of Laminar Premixed Flames Forced by Harmonic Velocity Disturbances

B08-018 Magnetic Flowmeter Burner Measurement of a Solid Propellant Pressure-Coupled Imaginary Response

B08-064 Laboratory Scale Survey of Pentad Injector Stability Characteristics

B08-109 Observation of Unsteady Cryogenic Flows from a Characteristic Coaxial Rocket Injector

B08-060 Burning Rate Characteristics of Ammonium Perchlorate-Based Composite Propellant Using Bimodal Ammonium Perchlorate

B08-063 Resonance Frequencies and Damping of a Combustor Acoustically Coupled to an Absorber

B08-078 Nonlinear Interactions Between Forced and Self-Excited Acoustic Oscillations in Premixed Combustor

B08-096 Combustion Instability Problems Analysis for High-Pressure Jet Engine Cores

B08-127 Analytical Solution for Pressure-Coupled Combustion Response Functions of Composite Solid Propellants

B08-166 Characterization of an Acoustically Self-Excited Combustor for Spray Evaporation

B08-161 Inert Particles for Axial-Combustion-Instability Suppression in a Solid Rocket Motor

Detonation

B08-008 Single-Cycle Impulse from Detonation Tubes with Nozzles

B08-009 Effect of High-Voltage Pulsed Discharges on Deflagration to Detonation Transition **B08-041** Multicyclic-Detonation-Initiation Studies in Valveless Pulsed Detonation Combustors

B08-158 Study on the Operation of Pulse-Detonation Engine-Driven Ejectors

B08-157 Performance Studies of Pulse Detonation Engine Ejectors

B08-098 Hydrocarbon Fuel Flash Vaporization for Pulsed Detonation Combustion

Droplet and Spray Characterization

B08-159 Spray Characteristics of Recessed Gas-Liquid Coaxial Swirl Injector

B08-031 Breakup of Aerated Liquid Jets in Subsonic Crossflow

B08-110 Inexpensive Optically Isolated Nanoammeter for Use with Micro-Newton Electric Propulsion Technology

B08-168 Combustion of Decane-Based Slurries with Metallic Fuel Additives

B08-007 Studies on Spray Behavior of a Pressure Swirl Atomizer in Transition Regime

B08-135 Characterization of a Prefilming Airblast Atomizer in a Strong Swirl Flowfield

Electric Propulsion

B08-119 Hybrid Particle-in-Cell Erosion Modeling of Two Hall Thrusters

B08-104 Electron Dynamics After Exit Plane of Stationary Plasma Thruster Discharge Chamber **B08-118** Molecular Dynamics Simulation of Ion

Emission from Nanodroplets of Ionic Liquids **B08-067** Particle Simulation of Plume Flows from an Anode-Layer Hall Thruster **B08-110** Inexpensive Optically Isolated Nanoammeter for Use with Micro-Newton Electric Propulsion Technology

B08-117 Measurement of 30-Centimeter Ion Thruster Discharge Cathode Erosion

B08-069 Relationship Between Anode Spots and Onset Voltage Hash in Magnetoplasmadynamic Thrusters

B08-012 Plume Expansion and Ionization in a Microlaser Plasma Thruster

B08-015 Testing a Helicon Double Layer Thruster Immersed in a Space-Simulation Chamber

B08-016 Bismuth Hollow Cathode for Hall Thrusters

B08-040 Testing of a 250-Kilowatt Fault-Tolerant Permanent Magnet Power Generation System for Large Civil Aeroengines

B08-081 Corruption of Pulsed Electric Thruster Voltage Fluctuation Measurements by Transmission Line Resonances

B08-068 Numerical and Experimental Investigations of Crossover Ion Impingement for Subscale Ion Optics

B08-163 Dormant Cathode Erosion in a Multiple-Cathode Gridded Ion Thruster

B08-013 Magnetic Sensing of Azimuthal Current in Hall Thrusters: In-Flight Diagnostic Potential **B08-105** Role of Superconducting Shields in

B08-017 Charged Nanoparticle Source for High Thrust Level Colloid Thruster

Electrodynamic Propulsion

B08-014 Near Exit Plane Velocity Field of a 200-Watt Hall Thruster

B08-121 Performance Modeling of a Coaxial Radio-Frequency Gas-Discharge Microthruster

B08-137 Electromagnetic Flow Sensor for Liquid Metal-Fed Electric Propulsion

B08-164 Geosynchronous-Earth-Orbit Communication Satellite Deliveries with Integrated Electric Propulsion

B08-108 Ion-Collision Emission Excitation Cross Sections for Xenon Electric Thruster Plasmas

B08-107 Wear Mechanisms in Electron Sources for Ion Propulsion, 2: Discharge Hollow Cathode **B08-106** Wear Mechanisms in Electron Sources for Ion Propulsion, 1: Neutralizer Hollow Cathode

Emissions and Noises

B08-045 Sight-Premixing Effects on Oxidation/ Formation of Polycyclic Aromatic Hydrocarbon in Counterflow Flames

B08-072 Microphysical Modeling of Ground-Level Aircraft-Emitted Aerosol Formation: Roles of Sulfur-Containing Species

B08-097 Computational Methodology for Carbon Monoxide Emission for Aeroengine Combustor Design

B08-078 Nonlinear Interactions Between Forced and Self-Excited Acoustic Oscillations in Premixed Combustor

B08-096 Combustion Instability Problems Analysis for High-Pressure Jet Engine Cores

B08-046 Investigation of Active Flow Control on Diesel Engine Aftertreatment

Engine Control Integration and Health Monitoring

B08-095 Adaptive Estimation Algorithm for Aircraft Engine Performance Monitoring

B08-013 Magnetic Sensing of Azimuthal Current in Hall Thrusters: In-Flight Diagnostic Potential

Engine Cooling and Heat Transfer

B08-048 Low-Heat-Load-Vane Profile Optimization, Part 1: Code Validation and Airfoil Redesign

B08-055 Investigation of Two-Dimensional Scramjet Inlet Flowfield at Mach 7

B08-050 Experimental Evaluation of a Turbine Blade with Potassium Evaporative Cooling

B08-136 Detached-Eddy Simulation of a Louver-Cooling Scheme for Turbine Blades

B08-010 Study of Heat Transfer Correlations for Supercritical Hydrogen in Regenerative Cooling Channels

B08-075 Infrared Signature Suppression of Helicopter Engine Duct Based on "Conceal and Camouflage"

Engine Performance

B08-089 Extraction of One-Dimensional Flow Properties from Multidimensional Data Sets

B08-008 Single-Cycle Impulse from Detonation Tubes with Nozzles

B08-046 Investigation of Active Flow Control on Diesel Engine Aftertreatment

B08-058 Internal Flow Dynamics in a Valveless Airbreathing Pulse Detonation Engine

B08-007 Studies on Spray Behavior of a Pressure Swirl Atomizer in Transition Regime

Engine Power Cycles

B08-160 Opportunities for a Liquid Rocket Feed System Based on Electric Pumps

Fuel Cells

B08-090 Computational Study on the Critical Nozzle Flow of High-Pressure Hydrogen Gas

Fuels and Propellants, Properties of

B08-023 Combustion of Boron-Titanium Nanocomposite Powders in Different Environments B08-026 Laboratory-Scale Thermal Stability Ex-

periments on RP-1 and RP-2

B08-100 Ignition of Iron-Coated and Nickel-Coated Aluminum Particles Under Normal- and Reduced-Gravity Conditions

 $\begin{array}{llll} \textbf{B08-019} & Silanes/H_2O_2; & A & High-Performance \\ Synthetic & Bipropellant & for & Chemical & Space \\ Propulsion & & & & & \\ \end{array}$

B08-024 Aluminum-Rich Al-MoO₃ Nanocomposite Powders Prepared by Arrested Reactive Milling

B08-128 Combustion Mechanism of Ammonium-Nitrate-Based Propellants

B08-060 Burning Rate Characteristics of Ammonium Perchlorate-Based Composite Propellant Using Bimodal Ammonium Perchlorate

B08-018 Magnetic Flowmeter Burner Measurement of a Solid Propellant Pressure-Coupled Imaginary Response

B08-099 Experimental and Numerical Investigation of n-Heptane/Air Counterflow Nonpremixed Flame Structure

B08-168 Combustion of Decane-Based Slurries with Metallic Fuel Additives

B08-047 Metal-CO₂ Propulsion for Mars Missions: Current Status and Opportunities

Gas Turbine Engines

B08-093 Increasing Gas Turbine Blade Damping Through Cavities Filled with Viscoelastic Materials

B08-054 Aerodynamics of Fan Flow Deflectors for Jet Noise Suppression

B08-094 Exploring the Effects of Removing Process-Intrinsic Constraints on Gas Turbine Design

B08-135 Characterization of a Prefilming Airblast Atomizer in a Strong Swirl Flowfield

B08-049 Low-Heat-Load-Vane Profile Optimization, Part 2: Short-Duration Shock-Tunnel Experiments

B08-092 Leakage Assessment of Pressure-Exchange Wave Rotors

B08-077 Implications of Day Temperature for a High-Pressure-Turbine Blade's Low-Cycle-Fatigue Life Consumption

Hybrid Rocket Engines

B08-059 Optimal Design of Hybrid Rocket Motors for Microgravity Platform

Hypersonic Propulsion

B08-126 Experimental Study of a Dual-Mode Scramjet Isolator

B08-124 Shock Train Leading-Edge Detection in a Dual-Mode Scramjet

B08-032 Flush-Wall, Diamond-Shaped Fuel Injector for High Mach Number Scramjets

B08-005 Additives to Improve Fuel Heat Sink Capacity in Air/Fuel Heat Exchangers

B08-055 Investigation of Two-Dimensional Scramjet Inlet Flowfield at Mach 7

B08-034 Liquid-Fueled Strut-Based Scramjet Combustor Design: A Computational Fluid Dynamics Approach

B08-086 Effect of Liquid Injection on Acoustic Field Induced from Supersonic Flow Past Cavities **B08-123** Experimental Investigation of a Two-Dimensional and a Three-Dimensional Scramjet Inlet at Mach 7

B08-125 Limiting Contractions for Starting Simple Ramp-Type Scramjet Intakes with Overboard Spillage

B08-003 Computational Study of the Propulsive Characteristics of a Shcramjet Engine

B08-006 Concentration Distribution in Supersonic Flow Recirculation Region

Ignition

B08-082 Plasma-Assisted Ignition in ScramjetsB08-147 Characteristics of Gliding Arc and its

Application in Combustion Enhancement

B08-145 Nanosecond-Pulsed Discharges for Plasma-Assisted Combustion and Aerodynamics **B08-025** Heating and Ignition of Metallic Particles by a CO₂ Laser

B08-109 Observation of Unsteady Cryogenic Flows from a Characteristic Coaxial Rocket Injector

Laser Integration/Systems

B08-039 Time-Resolved Measurements of Impulse Generation in Pulsed Laser-Ablative Propulsion

B08-138 Moderate-Acceleration Launch Using Repetitive-Pulse Laser Ablation in a Tube

B08-103 Ablative Impulse Characteristics of Polyacetal with Repetitive CO₂ Laser Pulses

B08-165 Thrust Stand Micromass Balance for the Direct Measurement of Specific Impulse

Liquid Rocket Engines

B08-053 Rotordynamic Analysis of a Turbopump with the Casing Structural Flexibility

B08-160 Opportunities for a Liquid Rocket Feed System Based on Electric Pumps

B08-010 Study of Heat Transfer Correlations for Supercritical Hydrogen in Regenerative Cooling Channels

B08-064 Laboratory Scale Survey of Pentad Injector Stability Characteristics

B08-061 Testing and Characterization of a Hydrogen Peroxide Monopropellant Thruster

B08-109 Observation of Unsteady Cryogenic Flows from a Characteristic Coaxial Rocket Injector

B08-154 Tip Clearance Effect on the Performance of a Shrouded Supersonic Impulse Turbine

B08-159 Spray Characteristics of Recessed Gas-Liquid Coaxial Swirl Injector

Micro Propulsion and Power

B08-110 Inexpensive Optically Isolated Nanoammeter for Use with Micro-Newton Electric Propulsion Technology

B08-012 Plume Expansion and Ionization in a Microlaser Plasma Thruster

B08-066 Ultrasonic Propulsion

B08-165 Thrust Stand Micromass Balance for the Direct Measurement of Specific Impulse

B08-121 Performance Modeling of a Coaxial Radio-Frequency Gas-Discharge Microthruster **B08-017** Charged Nanoparticle Source for High Thrust Level Colloid Thruster

Microwaves

B08-116 Microwave Discharges and Possible Applications in Aerospace Technologies

Nuclear Propulsion and Power

B08-074 Carbon-Carbon Recuperators in Closed-Brayton-Cycle Space Power Systems

Ramjets and Scramjets

B08-089 Extraction of One-Dimensional Flow Properties from Multidimensional Data Sets

B08-126 Experimental Study of a Dual-Mode Scramjet Isolator

B08-124 Shock Train Leading-Edge Detection in a Dual-Mode Scramjet

B08-086 Effect of Liquid Injection on Acoustic Field Induced from Supersonic Flow Past Cavities B08-057 Matched Pressure Injections into a Supersonic Crossflow Through Diamond-Shaped Orifices

B08-033 Dual-Mode Combustion Experiments with an Integrated Aeroramp-Injector/Plasma-Torch Igniter

B08-005 Additives to Improve Fuel Heat Sink Capacity in Air/Fuel Heat Exchangers

B08-150 Investigation of Supersonic Combustion with Angled Injection in a Cavity-Based Combustor

B08-004 Numerical Simulation of Transverse Injection of Circular Jets into Turbulent Supersonic Streams

B08-056 Experimental Studies of Pylon-Aided Fuel Injection into a Supersonic Crossflow

B08-085 Complex Wall Injector Array for High-Speed Combustors **B08-149** Radical-Farm Ignition Processes in Two-Dimensional Supersonic Combustion

B08-125 Limiting Contractions for Starting Simple Ramp-Type Scramjet Intakes with Overboard Spillage

Rotating Machinery

B08-132 Parametric Study of Injection Angle Effects on Stability Enhancement of Transonic Axial Compressors

Solid Rocket Motors

B08-020 Microstructure of Composite Propellants Using Simulated Packings and X-Ray Tomography

B08-100 Ignition of Iron-Coated and Nickel-Coated Aluminum Particles Under Normal- and Reduced-Gravity Conditions

B08-018 Magnetic Flowmeter Burner Measurement of a Solid Propellant Pressure-Coupled Imaginary Response

B08-028 Boundary-Layer Effects on Internal Flow Choking in Dual-Thrust Solid Rocket Motors

B08-021 Multidimensional Numerical Simulation of Ammonium-Perchlorate-Based Propellant Combustion with Fine/Ultrafine Aluminum

B08-161 Inert Particles for Axial-Combustion-Instability Suppression in a Solid Rocket Motor

B08-027 Analysis of Injecting Wall Inclination on Segmented Solid Rocket Motor Instability

B08-101 Effects of Propellant Gases on Thermal Response of Solid Rocket Nozzle Liners

B08-162 Laser-Assisted Combustion of Solid Propellants at Low Pressures

B08-102 Chemical Erosion of Carbon-Carbon/ Graphite Nozzles in Solid-Propellant Rocket Motors

B08-127 Analytical Solution for Pressure-Coupled Combustion Response Functions of Composite Solid Propellants

Supersonic Combustion

B08-034 Liquid-Fueled Strut-Based Scramjet Combustor Design: A Computational Fluid Dynamics Approach

B08-080 Performance of Aft-Ramp Cavities for Flame Stabilization in Supersonic Flows

B08-126 Experimental Study of a Dual-Mode Scramjet Isolator

B08-149 Radical-Farm Ignition Processes in Two-Dimensional Supersonic Combustion

B08-150 Investigation of Supersonic Combustion with Angled Injection in a Cavity-Based Combustor

B08-006 Concentration Distribution in Supersonic Flow Recirculation Region

Thermoelectric Power

B08-043 Thermoelectric Properties of β -Zn₄Sb₃ Synthesized by Mechanical Alloying and Pulse Discharge Sintering

B08-044 Thermoelectric Properties of Iron-and Lanthanum-Doped CoSb3 Compounds by Pulse Discharge Sintering

Turbomachinery

B08-051 Loss Mechanisms of High-Turning Supercritical Compressor Cascades

B08-132 Parametric Study of Injection Angle Effects on Stability Enhancement of Transonic Axial Compressors **B08-001** Turbulence Models Assessment for Large-Scale Tip Vortices in an Axial Compressor Rotor

B08-037 Multiple Surrogate Modeling for Axial Compressor Blade Shape Optimization

B08-002 Effects of Tip Clearance on Aerodynamic Damping in a Linear Turbine Cascade

B08-053 Rotordynamic Analysis of a Turbopump with the Casing Structural Flexibility

B08-134 Flow Study of a Redesigned High-Pressure-Ratio Centrifugal Compressor

B08-154 Tip Clearance Effect on the Performance of a Shrouded Supersonic Impulse Turbine

B08-153 Detached-Eddy Simulation Procedure Targeted for Design

B08-151 Contrarotating Turbine Aerodesign for an Advanced Hypersonic Propulsion System

B08-152 Spanwise Wake and Discrete Jet Disturbances on a Separating Turbine Blade

B08-131 Multiple Objective Optimization and Inverse Design of Axial Turbomachinery Blades B08-091 Unsteady Strong Shock Interactions in a Transonic Turbine: Experimental and Numerical

B08-155 Flow Structure of Short-Length-Scale Disturbance in an Axial-Flow Compressor

SPACE TECHNOLOGY

Space Processing

B08-070 Compact Reverse Water-Gas-Shift Reactor for Extraterrestrial In Situ Resource Utilization

B08-011 Microgravity Geyser and Flowfield Prediction

Space Systems

B08-015 Testing a Helicon Double Layer Thruster Immersed in a Space-Simulation Chamber

B08-105 Role of Superconducting Shields in Electrodynamic Propulsion

Spacecraft Power

B08-122 Solar Cell Modeling and Parameter Optimization Using Simulated Annealing

B08-074 Carbon-Carbon Recuperators in Closed-Brayton-Cycle Space Power Systems

Spacecraft Propulsion System Integration

B08-164 Geosynchronous-Earth-Orbit Communication Satellite Deliveries with Integrated Electric Propulsion

STRUCTURAL MECHANICS AND MATERIALS

Aeroelasticity and Control

B08-002 Effects of Tip Clearance on Aerodynamic Damping in a Linear Turbine Cascade

Structural Durability (Including Fatigue, Fracture, and Environmental Degradation)

B08-093 Increasing Gas Turbine Blade Damping Through Cavities Filled with Viscoelastic Materials

Structural Dynamics and Characterization

B08-053 Rotordynamic Analysis of a Turbopump with the Casing Structural Flexibility

THERMOPHYSICS AND HEAT TRANSFER

Ablation, Pyrolysis, Thermal Decomposition and Degradation

B08-102 Chemical Erosion of Carbon-Carbon/ Graphite Nozzles in Solid-Propellant Rocket Motors

B08-101 Effects of Propellant Gases on Thermal Response of Solid Rocket Nozzle Liners

B08-026 Laboratory-Scale Thermal Stability Experiments on RP-1 and RP-2

Aerothermodynamics/Thermal Protection

B08-049 Low-Heat-Load-Vane Profile Optimization, Part 2: Short-Duration Shock-Tunnel Experiments

Boiling/Condensation

B08-050 Experimental Evaluation of a Turbine Blade with Potassium Evaporative Cooling

Computational Heat Transfer

B08-048 Low-Heat-Load-Vane Profile Optimization, Part 1: Code Validation and Airfoil Redesign

B08-025 Heating and Ignition of Metallic Particles by a CO₂ Laser

Forced Convection

B08-010 Study of Heat Transfer Correlations for Supercritical Hydrogen in Regenerative Cooling Channels

B08-074 Carbon-Carbon Recuperators in Closed-Brayton-Cycle Space Power Systems

Laser Interaction

B08-025 Heating and Ignition of Metallic Particles by a CO₂ Laser

B08-039 Time-Resolved Measurements of Impulse Generation in Pulsed Laser-Ablative Propulsion

Nonintrusive Diagnostics

B08-108 Ion-Collision Emission Excitation Cross Sections for Xenon Electric Thruster Plasmas

Radiation in Participating Media

B08-021 Multidimensional Numerical Simulation of Ammonium-Perchlorate-Based Propellant Combustion with Fine/Ultrafine Aluminum

Thermochemistry and Chemical Kinetics

B08-024 Aluminum-Rich Al-MoO₃ Nanocomposite Powders Prepared by Arrested Reactive Milling

B08-022 Use of Condensed-Phase Reaction Models in Combustion Simulation of Energetic Materials

B08-129 Chemi-Ion-Current-Induced Dissociative Recombination in Premixed Hydrocarbon/

B08-149 Radical-Farm Ignition Processes in Two-Dimensional Supersonic Combustion

B08-128 Combustion Mechanism of Ammonium-Nitrate-Based Propellants

B08-045 Sight-Premixing Effects on Oxidation/ Formation of Polycyclic Aromatic Hydrocarbon in Counterflow Flames