

## 2005 Best Papers

During 2005, the following technical papers were selected as a “Best Paper.” Authors received a certificate of merit, recognizing technical and scientific excellence.

### **ASME/Boeing Best Paper**

AIAA Paper 2004-1606 "Constitutive Modeling of Crosslinked Nanotube Materials" by Gregory Odegard, Michigan Tech University, Houghton, Michigan; Sarah-Jane Frankland, National Institute of Aerospace, Hampton Virginia; and Matthew Herzog, Thomas Gates, and Catharine Fay, NASA Langley Research Center, Hampton, Virginia

### **Aerospace Power Systems Best Paper**

AIAA Paper 2004-5762 "Themophotovoltaic Spectral Control" by David Depoy, Patrick Fourspring, Edward Brown, P Baldasaro, J. Beausang, M. Dashiell, and K. Rahner, Lockheed Martin, Schenectady, New York; Thomas D Rahmlow, Jeanne Lazo-Wasem, and Edward Gratrix, Rugate Technologies Inc. Oxford, Connecticut; and Ben Werhsman, Bechtel Bettis Atomic Power Lab, West Mifflin, Pennsylvania.

### **Air Breathing Propulsion Best Paper**

AIAA Paper 2004-3934, "A CFD Case Study of Flow Through A Transonic Compressor Rotor with Large Tip Clearances," by Louise Merz and Paul Orkwis, University of Cincinnati, Cincinnati, Ohio and Lyle Dailey, GE Aircraft Engines, Cincinnati, Ohio.

### **Applied Aerodynamics Best Paper**

AIAA Paper 2005-0459, "Design and Testing of a Blended Wing Body with Boundary Layer Ingestion Nacelles at High Reynolds Numbers," by Odis Pendergraft, Melissa Carter, and Richard Campbell, NASA Langley Research Center, Hampton Virginia; Douglas Friedman and Leonel Serrano, The Boeing Company.

### **Air Transportation Systems and Operations**

AIAA Paper 2004-6392 "Improved Conflict Detection for Reducing Operational Errors in Air Traffic Control," by Russell Paielli and Heinz Erzberger, NASA Ames Research Center, Moffett Field, California.

### **Atmospheric Flight Mechanics Best Papers**

AIAA Paper 2004-5048, "Continuous Beta Sweep Test & Analysis Technique (CBSTAT) for Predicting Wing Drop Based on Static Wind Tunnel Testing," by Jeffrey McConnell, Lockheed Martin Aeronautics Company, Fort Worth, Texas.

AIAA Paper 2005-0032, "A Generic Guidance and Control Structure for Six-Degrees-of-Freedom Conceptual Aircraft Design," by Timothy H Cox and Chris Cotting, NASA Dryden Flight Research Center, Edwards Air Force Base, California.

### **Electric Propulsion Best Paper**

AIAA Paper 2004-3608, "An Overview of the Results From the 30,000 Hour Life Test of Deep Space 1 Flight Spare Ion Engine," by Anita Sengupta, John Brophy, John

Anderson, and Charles Garner, Jet Propulsion Laboratory, Pasadena, California and Bruce Banks, Kim de Groh and Tina Karniotis, NASA Glenn Research Center, Cleveland, Ohio.

**Fluid Dynamics Best Paper**

AIAA Paper 2005-1405, "Flexible Flapping Airfoil Propulsion at Low Reynolds Numbers," by Sam Heathcote and I. Gursul, University of Bath, Bath, United Kingdom.

**Gossamer Spacecraft Forum Best Paper**

AIAA Paper 2004-1574 "New Deployable Reflector Concept" by O. Soykasap, A.M. Watt, and S. Pellegrino, University of Cambridge, Cambridge, Great Britain

**Ground Testing Best Paper**

AIAA Paper 2005-0698 "Aerodynamic Development of a Four-Sided Ground Run-Up Enclosure for Propeller Transport Aircraft." By Joop Gooden of the National Aerospace Laboratory, Amsterdam, The Netherlands; Werner Hoelmer, ITF Services, Cincinnati Ohio; Michael Roark, Burns & McDonnell Aviation, Kansas City, Missouri; and Robert Van der Tang, Royal Netherlands Air Force, The Hague, The Netherlands.

**Hybrid Rockets Best Paper**

AIAA Paper 2004-3821, "Characterization of Nano-Sized Energetic Particle Enhancement of Solid-Fuel Formulations in an X-Ray Transparent Hybrid Rocket Engine," by Brian Evans, Nicholas Favorito, Grant Risha, Eric Boyer, Robert Wehrman, and Kenneth Kuo, Pennsylvania State University, University Park, Pennsylvania.

**Liquid Propulsion Best Paper**

AIAA Paper 2004-3354, "Development and Flight-Testing of Liquid Propellant Aerospike Engines," by Eric Besnard, California State University, Long Beach, California and John M Garvey, Garvey Spacecraft Corporation, Long Beach, California.

**Nuclear and Future Flight Best Paper**

AIAA Paper 2004-3700, "Guidelines for a Space Propulsion Device Based on Heim's Quantum Theory," by Jochem Hauser, University of Applied Sciences, Salzgitter, Germany and Walter Droscher, Institut für Grenzgebiete der Wissenschaft (IGW), and Leopold-Franzens Universität, Innsbruck, Austria.

**Plasmadynamics and Lasers Best Paper**

AIAA Paper 2004-2257, "Mitigation of Oxygen Attachment in High Pressure Air Plasmas by Vibrational Excitation," by Kraig Frederickson, Wonchul Lee, Igor Adamovich, Joseph Rich, Walter Lempert and Peter Palm, Ohio State University.

**Propellants and Combustion Best Paper**

AIAA Paper 2005-0352, "Dynamics of Droplet-Film Collision," by Kuo-Long Pan National Central University, Taiwan and Chung Law, Princeton University. Princeton New Jersey.

**Solid Rockets Best Paper**

AIAA Paper 2004-4054, "Nonlinear Rocket Motor Stability Prediction: Limit Amplitude, Triggering and Mean Pressure Shift" by Gary Flandro, Sean Fischbach and Joseph Majdalani, University of Tennessee Space Institute, Tullahoma, Tennessee, and Jonathan French, Software and Engineering Assoc Inc., Carson City, Nevada.

**Terrestrial Energy Best Paper**

Paper 2004-0814 "Characteristics of Nonbuoyant Elliptical Jet Diffusion Flames" by Ahsan Choudhuri and Jorge Camacho, University of Texas, El Paso, Texas.

**Thermophysics Best Papers**

AIAA Paper 2004-2455, "Uncertainty and Sensitivity Analysis of Thermochemical Modeling for Titan Atmospheric Entry," by Deepak Bose, Eloret Corporation, and Michael Wright and Tahir Gokcen, NASA Ames Research Center, Moffett Field, California.

AIAA Paper 2004-1183, "DSMC Modeling of Near-Continuum Flow Over a Wedge With Real Gas Effects," by Yevgeniy Bondar and Mikhail Ivanov, Institute of Theoretical and Applied Mechanics, Russia; Sergey Gimelshein, University of Southern California, and Gennady Markelov, Advanced Operations and Engineering Services, The Netherlands.

**Thermophysics Best Student Paper**

AIAA Paper 2004-1351, "Development of a Two-Way Coupled Model for Two Phase Rarefied Flows," by Jonathan Burt and Iain Boyd, University of Michigan, Ann Arbor, Michigan.