

Nuclear and Emerging Technologies for Space (NETS 2023)

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487 Preliminary Nuclear Thermal Propulsion Engine System Trades for Robotic Missions to Jupiter—*Saroj Kumar (Univ. Alabama, Huntsville), L. Dale Thomas (Univ. Alabama, Huntsville), Jason T. Cassibry (Univ. Alabama, Huntsville)*

493 Radioisotope Power Systems: RPS Technology Development

494 Ice-Mining on the Moon with Radioisotope Power Systems—*Hannah M. Sargeant (Univ. Leicester), Ramy Mesalam (Univ. Leicester), Emily Jane Watkinson (Univ. Leicester), Alessandra Barco (Univ. Leicester), Richard M. Ambrosi (Univ. Leicester), Leo Gard (Aerojet Rocketdyne), Larry Trager (Aerojet Rocketdyne), Bert Lara (Aerojet Rocketdyne), Erik Scougal (Aerojet Rocketdyne), Tim Tinsley (Univ. Leicester)*

499 A Study on Effect of Tuning Capacitor in Dynamic Radioisotope Power Systems—*Donguk Max Yang (NASA Glenn Research Center), Nicholas A. Schifer (NASA Glenn Research Center), Tyler R. Steiner (NASA Glenn Research Center), Matthew D. Stang (NASA Glenn Research Center)*

503 Long-Term Testing of Spark Plasma Sintered Silicon Germanium Unicouples—*Tim C. Holgate (Johns Hopkins APL), Jonathan Pierce (Johns Hopkins APL), Richard Ung (Johns Hopkins APL), Jake Ballard (Johns Hopkins APL), Meiyong Himmtann (Johns Hopkins APL), Rasdip Singh (SOAL Technologies), Jeffrey Hagler (NCSU), Phil Barletta (NCSU), Tim Erickson (Johns Hopkins APL), Paul Ostdiek (Johns Hopkins APL), Rama Venkatasubramanian (Johns Hopkins APL)*

510 Revised Estimates for Dragonfly MMRTG Neutron Spectrum and Effects—*Teyen Widdicombe (Center for Space Nuclear Research), Berenice Sosa-Aispuro (Center for Space Nuclear Research), J. S. Herring (Center for Space Nuclear Research)*

514 Calculation of Space Radiation Exposure on Bi₂Te₃-Based Thermoelectric Generator—*Sunjin Kim (KAERI), Jong-Bum Kim (KAERI), Kwang-Jae Son (KAERI), Jin-Joo Kim (KAERI), Jin Kim (KAERI), Jintae Hong (KAERI)*

521 Panel: Staffing the Future

523 Fission Surface Power: Multiphysics

524 Neutronic Feasibility of Ultra-Compact, Long-Life Molten Salt Metal Reactor (MSMR)—*Jaehyun Ryu (KAIST), Eunhyug Lee (KAIST), Yonghee Kim (KAIST)*

529 Preliminary Heat-Transfer Modelling of In-Core Thermoelectric Conversion for Small-Scale Space Reactors—*Ramy Mesalam (Univ. Leicester), Agostino Muratto (Univ. Leicester), Richard M. Ambrosi (Univ. Leicester)*

533 An Initial Look at the Heat Pipe Resiliency to Reactor Operation—*Vedant K. Mehta (LANL), Sebastian C. Corbisiero (INL), Dasari V. Rao (LANL)*

540 Physics Model Considerations for Nanocomposite Shielding in High Energy Proton Fields—*Justina A.M. Freilich (Oregon State), Camille J. Palmer (Oregon State)*

545 Propulsion: Materials and Testing

546 The Effects of Hot Hydrogen Exposure on (U,Zr)C Fuel for Nuclear Thermal Propulsion—*Jhonathan Rosales (NASA Marshall Space Flight Center), Arne Croell (Univ. Alabama, Huntsville), Jamelle K.P. Williams (NASA Marshall Space Flight Center), Brian Taylor (NASA Marshall Space Flight Center), Martin Volz (NASA Marshall Space Flight Center), Jason Reynolds (Univ. South Carolina), Christopher McKinney (NASA Marshall Space Flight Center)*

- 551 Mechanical Properties and Failure Mechanisms of Cermet Fuel for Nuclear Thermal Propulsion (NTP)—*James Mudd (LANL), Jeremy Watts (Missouri Univ. Science and Technology), Jhonathan Rosales (NASA Marshall Space Flight Center), Ryan Wilkerson (LANL), Brian Taylor (NASA Marshall Space Flight Center), William Fahrenholtz (Missouri Univ. Science and Technology), Gregory Hilmas (Missouri Univ. Science and Technology), Joseph Graham (Missouri Univ. Science and Technology)*
- 555 A Predictive Transient Model of the TREAT-SIRIUS Experiments—*Mustafa K. Jaradat (INL), Sebastian Schunert (INL), Frederick N. Gleicher (INL), Vincent M. Laboure (INL), Mark D. DeHart (INL)*
- 563 Vehicle-Level Performance Benefits of Ammonia Nuclear Thermal Propulsion—*Craig Foulds (Ultra Safe Nuclear), Doug Greisen (Ultra Safe Nuclear), Hari Nagarajan (Ultra Safe Nuclear), Michael Eades (Ultra Safe Nuclear)*
- 568 Thermal Analysis of the SIRIUS3 Nuclear Propulsion Fuel Calibration Experiment—*Frederick N. Gleicher (INL), Mustafa K. Jaradat (INL), Sebastian Schunert (INL), Mark DeHart (INL)*