**ismse – icpmse 2024 - PRELIMINARY PROGRAM**

**Monday, October 7, 2024**

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| 09:00 - 09:30 | Conference doors open and registration - Registration/Welcome desk open Monday -Thursday |  |
| 09:30 - 10 :30 | **Opening Session #1 (auditorium)**  Welcome & introduction of the conference by ISMSE & ICPMSE programme committee chairs:  Sophie Duzellier (ONERA) and Jacob Kleiman (ITL)  Overview of Programme, Panels & Proceeding  Invited talks : focus on Materials in Space   Environmental survivability of materials, overview of European technology developments and future vision (ESA)   Summary of U.S. National Science Foundation Space Materials workshop (Univ. Colorado) |  |
| 10:30 - 11:00 | Coffee break (Exhibition hall) |  |
| 11:30 12h30 | **Opening Session #2 (auditorium)**  Session Chairs : Sophie Duzellier (ONERA) & Jacob Kleiman (ITL)  Keynotes   Space Safety and Sustainability‐Concept of space debris protection (JAXA)   EuCLID mission and water ice contamination (ESA)  Industries & companies pitches |  |
| 12:30 - 14:00 | Lunch (Exhibition hall) |  |
| 14:00 - 16:00 | **Innovative & Sustainable Materials #1 (auditorium)**  **›**[**Development of Advanced Materials for Space Deployables**](https://ismse16.sciencesconf.org/542448)  *Edwin Teo, Nanyang Technological University* *14:00-14:30 (30min)*  **›**[**Innovative and sustainable materials for space application**](https://ismse16.sciencesconf.org/543513)  *Ugo Lafont, ESA-ESTEC, TEC-QEE, Keplerlaan 1, 2200 AZ Noordwijk, The Netherlands* *14:30-14:50 (20min)*  **›**[**Use of biobased materials in Space : not only sustainable but a real competitive advantage**](https://ismse16.sciencesconf.org/528425)  *Christian Puig, Airbus [France]* *14:50-15:10 (20min)*  **›**[**Material recycling and hardware re-use for Moon and Martian settlement**](https://ismse16.sciencesconf.org/532967)  *Francesco Caltavituro, Orbitale Hochtechnologie Bremen* *15:10-15:30 (20min)*  **›**[**Polymer Coatings as a Pathway to atomic level cleanliness, bioburden reduction and surface sampling of DNA**](https://ismse16.sciencesconf.org/542592)  *James Hamilton, University of Wisconsin-Platteville* *15:30-15:50 (20min)* |  |
| 16:00 - 16:30 | Coffee break (Exhibition hall) |  |
| 16:30 - 18:10 | **Environment Effects on Materials #1 (auditorium)**  **›**[**Solar Wind Proton Flux on Space Exposed Materials in the Interplanetary Environment**](https://ismse16.sciencesconf.org/542590)  *Joseph Minow, NASA Marshall Space Flight Center* *16:30-16:50 (20min)*  **›**[**Dose level at the surface of materials in space environment**](https://ismse16.sciencesconf.org/533195)  *Christophe INGUIMBERT, ONERA Toulouse* *16:50-17:10 (20min)*  **›**[**Estimation of End-of-Life Solar Absorptivity for Complex, Multi-Phased Space Missions**](https://ismse16.sciencesconf.org/537208) *- Brandon Hoffmann, Jacobs Technology ESCG - Abigail Zinecker Howard, NASA Johnson Space Center* *17:10-17:30 (20min)*  **›**[**Synergistic Effects of Dual Source Irradiation with Protons and Electrons**](https://ismse16.sciencesconf.org/534714)  *Erik Klein, Institute of Space Systems, Mechanics & Thermal Systems* *17:30-17:50 (20min)*  **›**[**Impact of Single and Combined Space Environment Factors on the Performance of Elastomer Micropatterned Dry Adhesives**](https://ismse16.sciencesconf.org/514840) *- Lennart Ziemer, Technical University of Berlin / Technische Universität Berlin* *17:50-18:10 (20min)* |  |
| 18:30 - 20:30 | Welcome Cocktail - Offered by ITL in Exhibition Hall |  |

**Tuesday, October 8, 2024**

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| 08:30 - 09:10 | **Keynote (auditorium)** - NASA |  |
| 09:10 - 10:30 | **Planetary Environment & Lunar Dust Mitigation #1 (auditorium)**  **›**[**Overview of NASA Gateway Lunar Dust Mitigation and Contamination Modeling and Analysis**](https://ismse16.sciencesconf.org/529902)  *- Ronald Lee, Booz Allen Hamilton* *09:10-09:30 (20min)*  **›**[**Characterization of thermo-optical properties of Power and Thermal Functional Surfaces Exposed to Lunar Dust Simulants**](https://ismse16.sciencesconf.org/540450) *- Sophie Duzellier, ONERA-The French Aerospace Lab* *09:30-09:50 (20min)*  **›**[**The Dusty Environment Application and Research DEAR project**](https://ismse16.sciencesconf.org/542479)  *- Harald Steininger, OHB System AG* *09:50-10:10 (20min)*  **›**[**An investigation of lunar dust simulant adhesion using a centrifuge system under high vacuum and UV irradiation conditions**](https://ismse16.sciencesconf.org/542071) *- Alice Suarez Kahan, ONERA–The French Aerospace Lab* *10:10-10:30 (20min)* |  |
| 10:30 - 11:00 | Coffee break (Exhibition hall) |  |
| 11:00 - 12:30 | Atomic Oxygen & LEO/VLEO Missions #1 (auditorium)  **›**[**Space-durable, 3D printed, high-performance polymers based on cyanate ester/extended-bismaleimide**](https://ismse16.sciencesconf.org/535083) *- Eitan Grossman, NOGA 3D Innovations, Soreq NRC* *11:00-11:20 (20min)*  **›**[**Effects of Atomic Oxygen on White Kapton and Flexible Flat Cables for the Interconnections in Solar Arrays**](https://ismse16.sciencesconf.org/542854) *- Miguel Ramiro, DHV Technology* *11:20-11:40 (20min)*  **›**[**Evaluation of the Atomic Oxygen Effect in case of Complex Geometry: Optimization of Simulation and Prediction for the EMA-SESAME Experiment**](https://ismse16.sciencesconf.org/533410) *- David Lévêque, ONERA-The French Aerospace Lab* *11:40-12:00 (20min)*  **›**[**Evaluation of the Atomic-Oxygen Resistance of Hybrid Organic/Inorganic Polymers from Lab and LEO Exposures**](https://ismse16.sciencesconf.org/543804) *- Aki Goto, Japan Aerospace Exploration Agency [Tsukuba], University of Colorado [Boulder]* *12:00-12:20 (20min)* |  |
| 12:30 - 14:00 | Lunch (Exhibition hall) |  |
| 14:00 - 16:00 | **Contamination #1 (auditorium)**  **›**[**Overview of the Lunar Gateway External Contamination Environment**](https://ismse16.sciencesconf.org/535131)  *Crystal Quiroz, Oceaneering, JETS Contract, Houston, TX, USA* *14:00-14:20 (20min)*  **›**[**Outgassing laws unraveled by characterizing variable thickness materials at species-level**](https://ismse16.sciencesconf.org/542470)  *Jean-François ROUSSEL, ONERA* *14:20-14:40 (20min)*  **›**[**Development of Lunar Gateway External Molecular Outgassing Contamination Models**](https://ismse16.sciencesconf.org/538794)  *William A. Hoey, Jet Propulsion Laboratory, California Institute of Technology* *14:40-15:00 (20min)*  **›**[**Molecular contamination: Learning from (in-flight) measurement data**](https://ismse16.sciencesconf.org/542436)  *Bjoern Duessmann, Airbus Defence and Space [Friedrichshafen]* *15:00-15:20 (20min)*  **›**[**Influence of outgassing and desorption on pressure in spacecraft cavities in flight**](https://ismse16.sciencesconf.org/542488)  *Jean-François ROUSSEL, ONERA* *15:20-15:40 (20min)* |  |
| 16:00 - 16:30 | Coffee break (Exhibition hall) |  |
| 16:30 - 18:00 | **Flight Experiment & Data (auditorium)**  **›**[**THERME experiments: a matter of contamination deposit morphology**](https://ismse16.sciencesconf.org/541605) *- David Lansade, ONERA Toulouse* *16:30-16:50 (20min)*  **›**[**Overview of Results from the MISSE 9-15 Polymers and Composites Experiment 1-4 (PCE 1-4)**](https://ismse16.sciencesconf.org/533350) *- Kim De Groh, NASA Glenn Research Center* *16:50-17:10 (20min)*  **›**[**New Materials for LEO, GEO and Planetary Environments: Preliminary Results from MISSE-17 Experiment**](https://ismse16.sciencesconf.org/543180) *- Jacob Kleiman, Integrity Testing Laboratory Inc* *17:10-17:30 (20min)*  **›**[**Presentation of EMA : assembly, integration and testing**](https://ismse16.sciencesconf.org/542875) *- Isabelle Savin Delarclause, Centre National d'Études Spatiales [Toulouse]* *17:30-17:50 (20min)* |  |

**Wednesday, October 9, 2024**

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| 08:30 - 09:10 | Keynote (auditorium) - JPL |  |
| 09:10 - 10:30 | **Contamination #2 (auditorium)**  **›**[**Analysis of Particle Contamination Generated by Ion Thruster Sputtering on Thermal Control Paint**](https://ismse16.sciencesconf.org/542586) *- Shun Imai, Japan Aerospace Exploration Agency [Sagamihara]* *09:10-09:30 (20min)*  **›**[**Polymers sputtering and induced contamination due to plasma thrusters**](https://ismse16.sciencesconf.org/542708) *- Lucas Nicolas, ONERA-The French Aerospace Lab* *09:30-09:50 (20min)*  **›**[**Ground-based experimental study on the contamination potential of a freely expanding 10 N bi-propellant thruster plume**](https://ismse16.sciencesconf.org/542869) *- Leonie Buntrock, German Aerospace Center* *09:50-10:10 (20min)*  **›**[**The EPIC-2 Bipropellant Plume-Induced Contamination Test Program and Application to Europa Clipper, Lunar Gateway and the International Space Station Programs**](https://ismse16.sciencesconf.org/542145) *- Carlos Soares, Jet Propulsion Laboratory* *10:10-10:30 (20min)* |  |
| 10:30 - 11:00 | Coffee break (Exhibition hall) |  |
| 11:00 - 12:00 | **Standards and Regulation (auditorium)**  **›**[**Development of the long-term storage guidelines for materials and processes: a European collaboration to draw-up harmonized recommendations and good practices.**](https://ismse16.sciencesconf.org/533883) *- Theo Henry, ESA-ESTEC, TEC-QEE, Keplerlaan 1, 2200 AZ Noordwijk, The Netherlands* *11:00-11:20 (20min)*  **›**[**Regulatory challenges for the European space sector**](https://ismse16.sciencesconf.org/543040) *- Premysl Janik, ESA - ESTEC (Netherlands)* *11:20-11:40 (20min)*  **›**[**Solvents and calibration standards alternatives with reduced environmental impact for space activities**](https://ismse16.sciencesconf.org/548011) *- Sabine Dagras, Airbus Defence and Space SAS* *11:40-12:00 (20min)* |  |
| **12:00 - 12:30** | **Presentation of posters and round tables (auditorium)** |  |
| 12:30 - 14:00 | Lunch (Exhibition hall) |  |
| 14:00 - 17:00 | **Posters Session (Exhibition hall)** |  |
| 15:30 - 17:00 | **Round Tables (auditorium and side rooms)**  **Contamination: do we want to go to a realistic multi-species approach ? From an experimental**  **species-level characterization to a physical modeling with real species. (ONERA, JF Roussel)**  ** Working towards a consolidated approach for combined environmental testing – development**  **of handbook, guidelines. How and when to test? technical / cost trade-off, what type of testing**  **should be performed etc (ESA, Julien Eck)**  ** Biobased or recycled materials for space? (ADS, C. Puig)**  ** Lunar Dust Mitigation TBD/TBC** |  |
| 19:00 - 23:55 | Conference Dinner - TBD |  |

**Thursday, October 10, 2024**

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| 09:00 - 10:30 | **Planetary Environment & Lunar Dust Mitigation #2 (auditorium)**  **›**[**Interaction of Lunar Dust Simulants with Materials: Importance of Charging**](https://ismse16.sciencesconf.org/543169)  *Jacob Kleiman, Integrity Testing Laboratory Inc* *09:00-09:20 (20min)*  **›**[**Ground testing of lunar dust simulant electrostatic charging under irradiation**](https://ismse16.sciencesconf.org/531483)  *Rémi Pacaud, ONERA, Université de Toulouse [Toulouse]* *09:20-09:40 (20min)*  **›**[**Lunar dust Contamination on habitable modules for exploration : impacts and mitigation approach for I-Hab**](https://ismse16.sciencesconf.org/532878)  *Ilaria Locantore, Thales Alenia Space* *09:40-10:00 (20min)*  **›**[**Design, Synthesis and Characterization of Novel Space Materials for Lunar Passive Dust Mitigation**](https://ismse16.sciencesconf.org/534514)  *Guido Saccone, Italian Aerospace Research Centre* *10:00-10:20 (20min)* |  |
| 10:30 - 11:00 | Coffee break (Exhibition hall) |  |
| 11:00 - 12:30 | **Atomic Oxygen & LEO/VLEO Missions #2 (auditorium)**  ***›***[***Individual erosion yields of FEP by atomic oxygen and by argon in simulated VLEO environments***](https://ismse16.sciencesconf.org/528327)  *Masahito Tagawa, Kobe University 11:00-11:20 (20min)*  ***›***[***Evaluation of atomic oxygen effects obtained onboard SLATS/MDM***](https://ismse16.sciencesconf.org/533128)  *Yugo Kimoto, Japan Aerospace Exploration Agency [Tsukuba] 11:20-11:40 (20min)*  ***›***[***Molecular Beam Investigations of Atomic Oxygen Reactivity and Scattering on Material Surfaces for Satellites in Very Low Earth Orbit***](https://ismse16.sciencesconf.org/535410)  *Timothy Minton, University of Colorado Boulder 11:40-12:00 (20min)*  ***›***[***Drag and O-atom Exposure Modeling for Satellites in Very Low Earth Orbit***](https://ismse16.sciencesconf.org/537463)  *Tom Schwartzentruber, Department of Aerospace Engineering and Mechanics, University of Minnesota 12:00-12:20 (20min)* |  |
| 12:30 - 14:00 | Lunch (Exhibition hall) |  |
| 14:00 - 16:00 | **Contamination #3 (auditorium)**  **›**[**Laser-Induced Contamination: Analyzing deposits from epoxy outgassing under 355 nm irradiation.**](https://ismse16.sciencesconf.org/533636)  *Amer Aoun, Institut Fresnel, Centre National d'Études Spatiales* *14:00-14:20 (20min)*  **›**[**Use of Multimodal camera for quick contamination assessments**](https://ismse16.sciencesconf.org/542272)  *Sandra Fontorbes, Airbus Defence and Space SAS* *14:20-14:40 (20min)*  **›**[**Simulation Approach and Examples of Particulate Contamination Transport Inside Fairing using DUSTFLOW**](https://ismse16.sciencesconf.org/542603)  *Armen Jaworski, CIM-mes Projekt* *14:40-15:00 (20min)*  **›**[**Design and Implementation of Blanket Venting for Roman Space Telescope**](https://ismse16.sciencesconf.org/543109)  *Elaine Stewart, NASA Goddard Space Flight Center* *15:00-15:20 (20min)*  **›**[**Micro-ElectroMechanical Systems (MEMS) Fabry-Perot (FP) spectrometer for measurement of contamination deposition**](https://ismse16.sciencesconf.org/542623)  *Gregory Bouquet, Smart Sensor Systems and Microsystems, Forskningsveien 1, 0314, SINTEF, Norway* *15:20-15:40 (20min)* |  |
| 16:00 - 16:30 | Coffee break (Exhibition hall) |  |
| 16:30 - 18:00 | **Innovative & Sustainable Materials #2 (auditorium)**  **›**[**Research on New Siloxane-Block-Polyimide Film for Space Application**](https://ismse16.sciencesconf.org/531449) *- Yugo Kimoto, Japan Aerospace Exploration Agency [Tsukuba]* *16:30-16:50 (20min)*  **›**[**Self-healing Composite for MMOD Impact Damage Recovery**](https://ismse16.sciencesconf.org/534566) *- Wojciech Guziewicz, AGH University of Krakow, Space Technology Centre* *16:50-17:10 (20min)*  **›**[**Development and qualification of a Glass Fabric for use in harsh space exploration environments**](https://ismse16.sciencesconf.org/542596) *- Christoph Roupec, Beyond Gravity Austria GmbH* *17:10-17:30 (20min)*  **›**[**Development of Cryogenic Phase Change Materials for Lunar Sample Return**](https://ismse16.sciencesconf.org/542814) *- Erin Hayward, NASA Marshall Space Flight Center* *17:30-17:50 (20min)* |  |

**Friday, October 11, 2024**

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| 08:30 - 10:30 | **Environment Effects on Materials #2 (auditorium)**  **›**[**MODIFICATION OF CHEMICAL CONTAMINANTS EXPOSED TO UV-RADIATION: A METHODOLOGICAL APPROACH APPLIED TO EPOXY ADHESIVES**](https://ismse16.sciencesconf.org/535956)  *Xavier Coqueret, CNRS UMR 7312 - Delphine FAYE, DTN/QE/LE* *08:30-08:50 (20min)*  **›**[**Optical signature simulation of proton-irradiated space white paint coating**](https://ismse16.sciencesconf.org/538837)  *Agnès LECADRE-SCOTTO, ONERA / DPHY, Université de Toulouse [Toulouse]* *08:50-09:10 (20min)*  **›**[**First Evaluation under Ultraviolet Radiations and Thermal Cycles of Nanoparticle-based Protective Coatings for Heterojunction Silicon Cells**](https://ismse16.sciencesconf.org/534425)  *Philippe Voarino, Univ. Grenoble Alpes, CEA, Liten, Campus Ines* *09:10-09:30 (20min)*  **›**[**Physical properties evolution of PEEK under proton irradiation**](https://ismse16.sciencesconf.org/534819)  *Lise SUJOL, ONERA, CIRIMAT* *09:30-09:50 (20min)*  **›**[**Update on Planetary, Lunar, & Asteroid Natural Environment Testbed (PLANET)**](https://ismse16.sciencesconf.org/533439)  *Erin Hayward, NASA Marshall Space Flight Center* *09:50-10:10 (20min)* |  |
| 10:30 - 11:00 | Coffee break |  |
| 11:00 - 12:00 | **Planetary Environment & Lunar Dust Mitigation #3 (auditorium)**  **›**[**A combined Eulerian-Lagrangian approach to simulation of plume-regolith interaction during the descent and ascent phase of the lunar lander**](https://ismse16.sciencesconf.org/542775) *- Armen Jaworski, CIM-mes Projekt* *11:00-11:20 (20min)*  **›**[**Instrumental methods to monitor and counter planetary oxidants in space applications**](https://ismse16.sciencesconf.org/543050) *- Christos D. Georgiou, University of Patras, Greece - Elias Chatzitheodoridis, National Technical University of Athens, Greece, ESA - ESTEC (Netherlands) - Ioannis Markopoulos, 01 Mechatronics, Greece - Malgorzata Holynska, ESA - ESTEC (Netherlands) - Adrian Philip Tighe, ESA - ESTEC (Netherlands)* *11:20-11:40 (20min)*  **›**[**The significance of producing activated Lunar and Martian dust simulants of high-fidelity for planetary exploration and habitability purposes**](https://ismse16.sciencesconf.org/543067) *- Elias Chatzitheodoridis, National Technical University of Athens, Greece, ESA - ESTEC (Netherlands) - Christos D. Georgiou, University of Patras, Greece - Ioannis Markopoulos, 01 Mechatronics, Greece - Malgorzata Holynska, ESA - ESTEC (Netherlands) - Adrian Philip Tighe, ESA - ESTEC (Netherlands)* *11:40-12:00 (20min)* |  |
| 12:00 - 12:30 | **Closing Session (auditorium)** |  |