

IXTH SPACE RESOURCES CONFERENCE

– INTERDISCIPLINARY FRONTIERS IN SPACE RESOURCE
UTILIZATION
KGK 2026

3-4 SEPTEMBER 2026
ADDITIONAL 0 DAY (2 SEPTEMBER 2026)

Faculty of Computer Science
AGH University of Krakow

Building D-17, 21 Kawior Street | Halls A, B, C - 1.38, 1.20, 1.19 |

Internet connection during the event available on the AGH campus:

Network: SRC2026 | Password: SPACECONFERENCE |



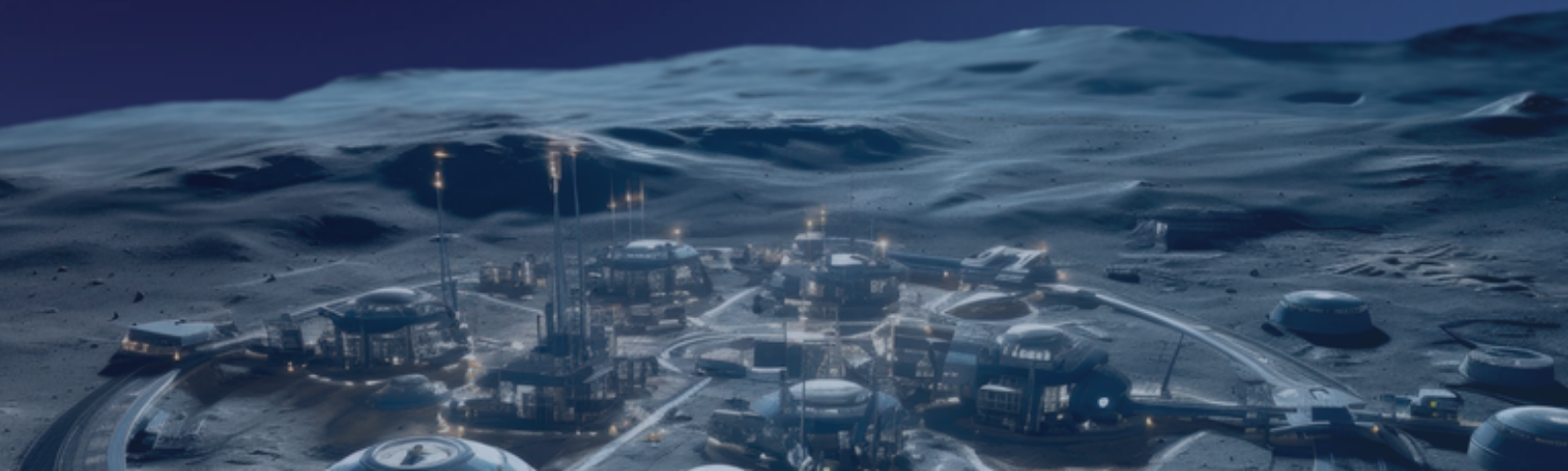
DAY 0 – WEDNESDAY, 2 SEPTEMBER 2026

15:00

Pre-conference Online Workshop (MS Teams)

Workshop for Presenting Authors: Pitching Your Research
to Diverse Audiences

Led by Anna Krukiewicz-Gacek and Sonja Bretschneider
Preparing for the Best Poster Presentation Competition



IXTH SPACE RESOURCES CONFERENCE

– INTERDISCIPLINARY FRONTIERS IN SPACE RESOURCE
UTILIZATION
KGK 2026

00

DAY 0 – WEDNESDAY, 2 SEPTEMBER 2026

18:30 – 22:00

Pre-conference Networking Evening: Defence & Space
Meetup 2026 organised by FORT Kraków

➔ **FULL PROGRAM** ➔

Kościuszko Mound, Al. Waszyngtona 1, 30-204 Kraków

01

DAY 1 – THURSDAY, 3 SEPTEMBER 2026

Faculty of Computer Science
AGH University of Krakow

Building D-17, 21 Kawiory Street
Halls A, B, C - 1.38, 1.20, 1.19

7:30 – 8:30

Registration and Welcome Coffee

8:30 – 10:00

Opening Session: Hall A (1.38)

8:30 – 8:35

Official Opening of the Conference

IXTH SPACE RESOURCES CONFERENCE

01

DAY 1 – THURSDAY, 3 SEPTEMBER 2026

8:35 – 8:40	Conference Chairman - Prof. Tadeusz Uhl (Dean of Space Technologies Faculty, AGH University of Krakow) – Welcome to IXth Space Resources Conference – Interdisciplinary Frontiers in Space Resource Utilization
8:40 – 8:45	Prof. Jerzy Lis (Rector of AGH University of Krakow)
8:45 – 8:50	Dr Marta Ewa Wachowicz (President of the Polish Space Agency POLSA)
8:50 – 8:55	Łukasz Wilczyński (European Space Foundation) – Welcome Word
8:55 – 9:00	Paweł Skubida (NAWA – National Agency of Academic Exchange)
9:00 – 9:30	Plenary Lecture – Prof. Angel Abbud Madrid (Colorado School of Mines) – "Resources Beyond Earth: Enabling Future Exploration and the New Space Economy"
9:30 – 10:00	Plenary Lecture – Prof. Piotr Orleański (Director of the Space Research Centre of the Polish Academy of Sciences) – "Poland in space - today and tomorrow. Ambitions, opportunities and barriers"
10:00 – 10:20	Coffee Break

IXTH SPACE RESOURCES CONFERENCE

01

DAY 1 – THURSDAY, 3 SEPTEMBER 2026

10:20 – 12:00 (Hall A – 1.38) Session – Space Resources Chairperson – Jakub Ciałęża	10:20 – 12:00 (Hall B – 1.20) Session – Propulsion systems for VLEO/LEO missions Chairperson – Mateusz Olek	10:20 – 12:00 (Hall C – 1.19) Space Structures and Materials Design and Operations Chairperson – Waldemar Pichór
10:20 – 10:30 Andrzej Kotarski (Polish Astronautical Society) – "Space Resources as an Enabler of Space Transportation Technology Development"	10:20 – 10:45 Martin Tajmar (AGH University of Krakow, Faculty of Space Technologies) – "Landscape of Innovative Propulsion Technologies"	10:20 – 10:35 Agata Bisping (AGH University of Krakow, Faculty of Humanities) – "Human Remains as an Edge Case for Circular Resource Design in Space"
10:30 – 10:45 Tom Cernev (Adelaide University) – "Leverage Points, Sustainability, and Resilience for the Lunar Water-ice in-situ Resource Utilisation Proces"	10:45 – 11:00 Adrian Parzybut (ILOT Łukasiewicz) – "98% Hydrogen Peroxide for Satellite Propulsion: Lessons Learned from the ILT-1 Monopropellant Thruster Development"	10:35 – 10:50 Izabela Nosidlak (AGH University of Krakow, Faculty of Geology, Geophysics and Environmental Protection) – "Autonomous Assembly of Mineral–Organic Material from Lunar Mare Regolith Simulant by a Self-Organising Microbial Consortium"
10:45 – 11:00 Piotr Kulinowski (AGH University of Krakow) – "Concept of a Flexible-Path Bucket Conveyor for Icy Regolith Transport from Lunar Craters"	11:00 – 11:10 Przemysław Turos (Symkom) – "Dogfight on Orbit – Thrusters Modelling, Maneuvers Design, Simulation and Operations with Use of STK and ODTK"	10:50 – 11:00 Dawid Mrozek (Silesian University of Technology, Faculty of Civil Engineering) – "Numerical Analysis of Structural Alkali-Activated Regolith Partitions in Lunar Lava Tubes"

11:00 – 11:15 Filip Wylęgała (AGH University of Krakow, Faculty of Space Technologies) – "Factors Affecting Lunar Regolith Simulant Behavior: Wall Material and Charging"	11:10 – 11:20 Tomasz Gajek (Symkom) – "Using ANSYS software to develop and manage a satellite constellation in low Earth orbit (LEO) – a use-case study"	11:00 – 11:10 Magdalena Mrozek (Silesian University of Technology, Faculty of Civil Engineering) – "Air Permeability of Alkali-Activated Regolith Based Materials for Lunar Construction"
11:15 – 11:30 Robin Nitschke (Technical University Berlin, Chair of Space Technology) – "Tailoring Lunar Regolith Simulants for Mobile Selective Laser Melting and Site-Specific ISRU Construction – MOONRISE"	11:20 – 11:30 Aleksander Kopyto (AGH University of Krakow, Faculty of Physics and Applied Computer Science) – "The PIRX Rocket – Systems Engineering Perspective"	11:10 – 11:25 Marcin Kitala (AGH University of Krakow, Faculty of Space Technologies) – "Vernacular Architecture as a Blueprint for Extraterrestrial Habitats"
11:30 – 11:45 Natalia Mętrak (Wojskowa Akademia Techniczna, Instytut Optoelektroniki) – "Optical and Algorithmic Detection of Helium-3 in Gases Released from Lunar Regolith"	11:30 – 11:40 Michał Kukulski (AGH University of Krakow, Faculty of Space Technologies) – "Mechanical Design of a Model Rocket – Lessons Learned from Building the First FST AGH Rocket for CRC 26"	11:25 – 11:40 Johannes Becker (Lunex technologies GmbH) – "Advances in Regolith Simulants for European Lunar and Martian Research"
11:45 – 12:00 Sumit Goski (Minores) – "SAMA: An Evidence-Readiness Framework for Asteroid Spectroscopy and Space-Resource Prospecting"	11:40 – 11:50 Piotr Mamczura (AGH University of Krakow, Faculty of Space Technologies) – "Manufacturing and Preliminary Characterization of an LP/SP Electrically Controlled Solid Propellant"	11:40 – 11:50 Abinaya Rengarajan (AGH University of Krakow, Materials Science and Ceramics) – "Ambipolar Thermoelectric Energy Conversion in Graded MoS₂/MoS₂-MoO₂ Films: A Single-Material Route to Bidirectional Power Harvesting in Space Thermal Environments"
	11:50 – 12:00 Bartosz Polak (AGH University of Krakow, Faculty of Space Technologies) – "Performance Enhancement of an Electrohydrodynamic Thruster via Emitter Electrode Heating in a DC Configuration"	11:50 – 12:00 Mateusz Pindel (AGH University of Krakow, Department of Inorganic Chemistry, Faculty of Materials Science and Ceramics) – "Additive Manufacturing of Thermoelectric Legs for Complex-Geometry Space Power Systems"

12:00 – 13:00

Lunch Break (snacks provided) / Group Photo

13:00 – 14:40 (Hall A – 1.38) Session – Space Robotics Chairperson – Karol Seweryn	13:00 – 14:40 (Hall B – 1.20) Session – Student Session Intro for all posters authors Chairperson – Piotr Kulinowski	13:00 – 14:40 (Hall C – 1.19) Human Impact Extreme Environments Chairperson – Justyna Topolska
13:00 – 13:25 Kamil Grassmann (PIAP Space sp. z o. o.) – "Robotic Systems as an Enabler for Planetary Exploration and Exploitation — the Case of the MANUS, DISTANT, and GALEON Projects"	Session Intro – Piotr Kulinowski (AGH University of Krakow) 1-2 min slots for all students – posters presenting authors (Posters Introduction) Each presenting author (Students) will have a 1-2 minute slot to introduce their work. Presenters are required to prepare one slide presenting their work. The goal of this slide is to pitch your research and warmly invite attendees to visit your full poster during the main Poster Session exhibition. Authors will present one by one, strictly following the numerical order of the official poster list found at the end of the conference programme (from P01 to P65).	13:00 – 13:15 Tomasz Zajkowski (AGH University of Krakow, Faculty of Space Technologies) – "New curricula: Space Biology"
13:25 – 13:40 Dawid Chmielewski, Andres Vejar (AGH University of Krakow, Institute of Telecommunications and Cybersecurity) – "Connectivity- and Resource-Aware Deep Reinforcement Learning for Cooperative Multi-Robot Planetary Exploration"		13:15 – 13:40 Aleksandra Woltyńska (AGH University of Krakow, Faculty of Space Technologies) – "They're here!" – A case study of non-native species in the vicinity of the Henryk Arctowski Polish Antarctic Station"
13:40 – 13:55 Karol Seweryn (Space Research Centre PAS, LMRS, AGH University of Krakow, Faculty of Space Technologies) – "Outcomes from Moon Harvesting project realization"		13:40 – 13:55 Izabela Świca (Polish Astrobiology Society, AGH University of Krakow, Faculty of Space Technologies) – "Concept for using extreme environments (the Arctic and Antarctica) to test the construction of planetary base infrastructure"
13:55 – 14:10 Jakub Kopeć (AGH University of Krakow) – "Can MXene-Based Sensors Enable Force-Aware Robotic Excavation on the Moon? Reduced-Gravity Regolith Cutting Tests Study"		13:55 – 14:10 Anna Tomusiak-Plebanek (Jagiellonian University Medical College in Krakow, Department of Microbiology) – "A pilot study on the susceptibility of Staphylococcus aureus to antimicrobial blue light after high-altitude stratospheric flight on the PERUN rocket"

14:10 – 14:25 Maciej J. Mikulski (AGH University of Krakow , Faculty of Space Technologies) – "Computationally Efficient Nonlinear Model Predictive Control for a Free-Floating Motor-Driven Space Soft Robot: A Comparative Study of Analytical and Neural Network Prediction Models"		14:10 – 14:25 Mohamed Ahmed (AGH University of Krakow , Faculty of Space Technologies) – "Lunar Regolith Abrasion: A Review of Wear Models and Material Sensitivity under Extreme Conditions"
14:25 – 14:40 Andrzej M.J. Skulimowski (AGH University of Krakow, Decision Science Laboratory) – "World Model Discovery by Coordinated Autonomous Robots Exploring Unknown Space Environments"		14:25 – 14:40 Discussion Panel

14:40 – 15:20

Coffee Break

Poster Competition part I with coffee (Chairpersons: Prof. Piotr Kulinowski & Anna Krukiewicz – Gacek)

15:20 – 17:00 (Hall A – 1.38) Session – Cybersecurity in Space Chairperson – Magdalena Ostasz	15:20 – 17:00 (Hall B – 1.20) Session – Space Law and Management Chairperson – Katarzyna Malinowska	15:20 – 17:00 (Hall C – 1.19) Session – Satellite missions Chairperson – Krzysztof Grabowski
15:20 – 15:35 Magdalena Ostasz (AGH University of Krakow) – "Cybersecurity in Space Sector – Introduction and Current Legal Situation in EU"	15:20 – 15:35 Bartosz Malinowski (CBK PAN) – "Remarks on Regulation of Space Mining Activity in Light of the Polish Act on Space Activity in the European Context"	15:20 – 15:40 Grzegorz Wrochna (Creotech) – "Twardowski – ESA High Resolution Lunar Mineralogy Mapper"
15:35 – 15:55 Marek Zmuda (INTEL) and Michał Zawada (SPACECOMM) – "TLE Security and PoC"	15:35 – 15:50 Leonie Enderle (University of Vienna, Austria) – "Information Sharing for Space Resource Activities on Celestial Bodies: Adapting the High Seas Treaty Clearing-House Mechanism to Outer Space"	15:40 – 15:55 Łukasz Maciejewski (SatRev) – "LEO Missions of SN10 Satellites as a Reference for SatRev's Versatile Satellite Systems"
15:55 – 16:15 Mariusz Głąbowski (PUT, Poznań) – "The Threat Landscape and Systemic Risk"	15:50 – 16:05 Katarzyna Franczak (Franczak Institute, Center for Space Law and Policy) – "Beyond Licensing: From Regulatory Control to Fostering Innovation"	15:55 – 16:10 Michał Zachara (KPLabs) – "Intuition-1 – on-board hyperspectral data processing"
16:15 – 16:35 Andrzej Olchawa (Vision Space) – "Cases Involving Software and Ground Vulnerabilities"	16:05 – 16:20 Lars R. "Jones" Vadjina (University of Tübingen & FUTURE DREAMS GmbH, Faculty of Humanities) – "Governing Autonomous Space Systems: A Governance Framework for Future Space Resource Operations"	16:10 – 16:25 Jakub Chachowski (AGH University of Krakow, SatLab AGH) – "Two months, two selfies - a retrospective on "HYPE" 1P PocketQube satellite mission"
16:35 – 17:00 Discussion – "Cybersecurity Challenges in Space Technologies"	16:20 – 16:35 Francesco Ventura (CROWN Group INC) – "A Governance Framework for Planetary Defense: Leadership, Cooperative Cost Allocation, and Article IX Sustainability Constraints"	16:25 – 16:40 Piotr Bylina (AGH University of Kraków, SatLab) – "Student-built cubesat for multispectral imaging with optical communication module – PUCHACZ mission overview"

	16:35 – 16:50 Kamil Muzyka (Prawo i Kosmos) – „Unconventional Means for Space Resources Extraction and In-Space Manufacturing – the Inadequacy of Contemporary Space Law”	16:40 – 16:50 Ariel Jr. Nopre (University of the Philippines, Electrical and Electronics and Engineering Institute) – "SULIAP: A COTS- Based RGB-NIR Camera Payload for Land Imagery Applications on the Maya-7 2U CubeSat"
	16:50 – 17:00 Bhanu Krishna Kiran Ravella (VIT-AP University, Amaravati School of Law) – "A Critical Appraisal of AI-Enabled Autonomous Space Systems under International Space Law"	16:50 – 17:00 Ayelet Weizman (Tel Aviv University, Space Engineering Center) – "TEVEL: Student-Built Nanosatellites as Scientific Missions and Educational Ecosystems"

19:30 – 22:00

Gala Dinner, Space Bingo (Novotel Krakow City West
Armii Krajowej 11, 30-150 Krakow)

IXTH SPACE RESOURCES CONFERENCE

02

DAY 2 – FRIDAY, 4 SEPTEMBER 2026

Faculty of Computer Science
AGH University of Krakow

Building D-17, 21 Kawior Street
Halls A, B, C - 1.38, 1.20, 1.19

8:00 – 8:30	Registration and Welcome Coffee
8:30 – 9:30	Opening Session – Plenary Lectures (Main Hall A – 1.38)
8:30 – 9:00	Plenary Lecture – Dr Panagiotis Partsinevelos (Technical University of Crete) "Autonomous navigation and path finding in extreme and GNSS-challenging environments"
9:00 – 9:30	Plenary Lecture – ISPACE – Rajathashree Nelamangala Muralidhar "Advancing Lunar Exploration: Enabling Next-Generation Rover Missions at ispace Europe"
9:30 – 10:00	Plenary Lecture – Michael Boss (Chief Commercial Officer Europa at Starlab Space GmbH) – "Stairway to LEO, Moon and beyond - Shaping the Future of the NewSpace LEO Economy and In-Space R&D"
10:00 – 10:30	Poster Competition part II with coffee (Chairpersons: Prof. Piotr Kulinowski & Anna Krukiewicz – Gacek)

IXTH SPACE RESOURCES CONFERENCE

– INTERDISCIPLINARY FRONTIERS IN SPACE RESOURCE
UTILIZATION
KGK 2026

02

DAY 2 – FRIDAY, 4 SEPTEMBER 2026

10:30 – 12:10 (Hall A – 1.38) Session – Oral Space Health Chairperson – Dirk Neefs	10:30 – 12:10 (Hall B – 1.20) Session – Remote Sensing and Earth Observation Chairperson – Michał Lupa	10:30 – 12:15 (Hall C – 1.19) Session - Space Technologies and Deep Space Chairperson – Czesław Kapusta
10:30 – 10:45 Launching of European Initiative for Oral and Systematic Health in Space (EIOSHS)	10:30 – 10:45 Tymoteusz Trocki (Cloudferry S.A.) – "From Data to Decisions: The Next Phase of Earth Observation"	10:30 – 10:45 Olga Sergijenko (AGH University of Krakow, Faculty of Space Technologies) – „Mind the Gap: How to Detect Mid-Frequency Gravitational Waves”
10:45 – 11:00 Dirk Neefs (EIOSHS, Scientific Department) – "SOMBA. Systematic Oral and Brain Gut Axis"	10:45 - 11:00 Gordana Kaplan (Eskisehir Technical University, Institute of Earth and Space Sciences) – "Remote Sensing-Based One-Class Classification for National-Scale Tree Species Mapping: Oriental Beech in Türkiye"	10:45 – 11:00 Hredya Mary Shajimon (University of Palermo, Department of Management Engineering) – "From Risk to Resilience: Dynamic Assessment of Complex Aerospace Networks Under Operational Stress Using European AirTransport as a Case Study"
11:00 – 11:15 Johan Aps (Opinident BV, Belgium) – "Considerations about diagnostic, therapeutic and environmental ionizing radiation"	11:00 – 11:10 Lidia Moryc (AGH University of Krakow, Faculty of Space Technologies, RadSCAN sp. z o.o.) – "Towards Precise Spectral Masking of Crop Diseases using Satellite Imagery and in situ Measurements"	11:00 – 11:15 Antoni Żywczak (AGH University of Krakow, Academic Centre for Materials and Nanotechnology) - "Quasicrystals as Promising Hydrogen Energy Storage Materials for Space Missions"

11:15 – 11:30 Justyna Topolska (AGH University of Krakow, Faculty of Space Technologies) – "Microplastics as Triggers of Calcium Phosphate Precipitation in Physiological Fluids: Implications for Biomineralisation in Future Space Habitats"	11:10 – 11:25 Piotr Pichór, Karolina Kucharz (AGH University of Krakow, Faculty of Space Technologies) – "Assessing Bottom Reflectance Contamination in Sentinel-2 Imagery of Shallow Water Bodies Using Laboratory Spectroradiometry"	11:15 – 11:30 Gabriela Opila (AGH University of Krakow, Physics and Applied Computer Science) – "Mössbauer Spectroscopy in Space Materials Investigation"
11:30 – 11:45 Ishita Singhal (Università degli Studi di Milano, Department of Biomedical, Surgical and Dental Sciences) – "Synthesis and Characterization of Surface Plasmon Resonance Silver Nanoparticles for Antimicrobial and Photocatalytic Biofilm Control in Extraterrestrial Environments"	11:25 – 11:40 Nabil MD Bokhtiar Abid (Al-Farabi Kazakh National University, Space Engineering and Technology) – Solid Earth Tide Residuals as Indicators of the 18.6-Year Lunar Nodal Cycle in GNSS Time Series"	11:30 – 11:45 Leszek Chlubny (AGH University of Krakow, Faculty of Materials Science and Ceramics) – "Evolution of Structure and Electrical Properties of MXene Materials with Annealing"
11:45 – 12:00 Aleksandra Skorupa-Strojna (Jagiellonian University Collegium Medicum, Doctoral School of Medical and Health Sciences) – "Mandibular Adaptation to Microgravity: From Bone Remodeling to Temporomandibular Function"	11:40 – 11:55 Geide Sakalauskaite (Warsaw University of Technology, Faculty of Power and Aeronautical Engineering) – "Season and Platform Dependent Sentinel-1 InSAR Coherence Over a Freeze-Thaw Dominated Terrain in Longyearbyen, Svalbard"	11:45 – 11:55 Eryk Zubrzycki (AGH University of Krakow, Faculty of Physics and Applied Computer Science) – "Orbital Laser Communication: Hardware and Optical Architecture of a Custom Downlink Module for the PUCHACZ 2U CubeSat"
12:00 – 12:10 Zino Robin Volkmann (Private Dental Clinic, Hannover, Germany) – "Mining NASA GeneLab for Space Oral Health: Oral Microbiome Dysbiosis and Endothelial Inflammatory Signatures"		11:55 – 12:05 Franciszek Ślusarczyk (AGH University of Krakow, Faculty of Electrical Engineering, Automatics, Computer Science and Biomedical Engineering) – "Flight-tested software for the avionics and ground station of the PIRX rocket"

	11:55 – 12:10 Dawid Jurczyński (Silesian University of Technology, Department of Distributed Systems and Informatic Devices) – "PACE-Era Multisensor Forecasting of Mineral-Dust Optical Depth: an Event-Grouped Benchmark with Implications for Space Biology, Health, and Astrobiology"	12:05 – 12:15 Małgorzata Stacherczak (Warsaw University of Technology, Students' Space Association) – "Stratospheric Weathering of Modified Wood: A Low-Cost Approach to Sustainable Aerospace Materials"
--	--	--

11:00 – 13:00 Meeting of the Małopolska Council for the Space Sector
(Room 1.36) (closed meeting, by invitation only)

12:10 – 13:10 Lunch Break (snacks provided)

13:10 – 14:00 Space Discussion Panel (Main Hall A – 1.38)
Kraków the next Space City?
A conversation with Kraków-based and Polish sector companies and regional representatives about the opportunities, talent, and growth directions of Kraków's space ecosystem.
Moderator: **Łukasz Wilczyński**

13:10 – 13:15 Prof. Tadeusz Uhl (Dean of the Faculty of Space Technologies, AGH University of Krakow) – Faculty Introduction

13:15 – 13:20 Łukasz Wilczyński (President of European Space Foundation) – Panel Intro

13:20 – 14:00 Panel with Guests (CloudFerro, Symkom, Airbus, ESA, ATMOS, Sybilla Technologies)

14:15 – 15:30 Academic Space Network Meeting (Room 1.36) (closed meeting, by invitation only)

14:00 – 15:40 (Hall A – 1.38) Session – Space Biology, Health, and Astrobiology Chairperson – Agata Rudolf	14:00 – 15:40 (Hall C – 1.19) Session – Artificial Intelligence for Onboard, Autonomous and Resource-Efficient Space Systems and Robotics Chairperson – Leszek Siwik
14:00 – 14:25 Åsa Berggren (Swedish University of Agricultural Sciences, Department of Ecology) - "Beyond Plants: Insects in Bioregenerative Life Support Systems"	14:00 – 14:15 Kevin Huang (ORIA Foundations) – "Beyond Open-Loop Metrics: Closed-Loop Evaluation of Predictive Autonomy for Safe Lunar Rovers"
14:25 – 14:45 Łukasz Karol Sitko (Earlham Institute, Norwich Research Park, Norwich, United Kingdom) – "Prion-Like Proteins as Ancient Architects of Protein Modularity and Epigenetic Inheritance"	14:15 – 14:30 Anna Jarosz-Kozyro (AGH University of Krakow) – "Digital Twin-Driven Predictive Maintenance for Space Resource Extraction Facilities"
14:45 – 15:00 Piotr Siupka (University of Silesia in Katowice , Institute of Biology, Biotechnology and Environmental Protection, Faculty of Natural Sciences) – "Smoldering Coal-Waste Dumps as Polyextreme Habitats: a Metagenomic Characterization of their Microbiomes"	14:30 – 14:45 Mina Bikhit (Opole University of Technology, Computer Science) – "On the development of algorithms for Event-Based Anomaly Detection for Telemetry Data using ESA-AD Benchmark"
15:00 – 15:10 Kamil Awsiuk (Jagiellonian University, Faculty of Physics Astronomy and Applied Computer Science) – "Effect of Ionizing Radiation on Bacterial Cellulose Produced by a Kombucha Consortium"	14:45 – 15:00 Artur Bas – "Towards a Computational Architecture for Behavioral Regulation in Embodied Autonomous Systems"
15:10 – 15:20 Kamila Bochenek (Polish Astrobiology Society) – "Phage Diversity and Distribution Across the International Space Station and Cleanroom Environments"	15:00 – 15:15 Magdalena Kocurek (AGH University of Krakow, Faculty of Space Technologies) – "From Population Models to Personalized Physiological Intelligence in Human Space Exploration"
15:20 – 15:30 Marta Koźmińczuk (Wroclaw Medical University, Clinical and Dissecting Anatomy Students' Scientific Club) – "Spaceflight-Associated Neuro-Ocular Syndrome: Multifactorial Pathophysiology and the Role of Glymphatic Dysfunction"	15:15 – 15:30 Jan Rajczyk (AGH University of Krakow) – "Towards Uncertainty-Aware Selective Information Acquisition in Heterogeneous Autonomous Systems"
15:30 – 15:40 Agata Rudolf (AGH University of Krakow, Faculty of Space Technologies) – "Space Biology Across Timescales: From Mitochondrial Responses to Evolutionary Adaptation"	15:30 – 15:40 Discussion

15:40 – 16:40

Coffee Break and Poster Session (Chairperson: Anna Krukiewicz – Gacek & Piotr Kulinowski)

16:00 – 18:00 (Hall A – 1.38)

Session – Habitats, Bioastronautics & Life Support Systems

Chairperson – **Agata Harasymczuk**

16:00 – 18:00 (Hall C – 1.19)

Session – Planetary Missions - Exploration and Exploitation

Chairperson – **Tadeusz Uhl**

16:00 – 16:15 Małgorzata Siekańska (University Of Physical Culture in Krakow) – "Psychophysiological Monitoring of Analog Astronauts During a One-Week Habitat Mission: a Pilot Study"

16:00 – 16:20 Michael Boss (Airbus) – "Return to the Moon: Mission Artemis"

16:15 – 16:30 Bartłomiej Smaga (AGH University of Krakow) – "Possibilities of Applying the Constructed Wetlands in Lunar Base Conditions"

16:20 – 16:35 – Waldemar Pichór (AGH University of Krakow, Faculty of Space Technologies) – "From Regolith to Infrastructure: Integrated Utilization of Martian Resources for Future Human Exploration"

16:30 – 16:45 Stanisław Sękara (AGH University of Cracow, Faculty of Space Technologies) – "BIOSIGNATIME: A Multimodal Approach to Investigating Subjective Time Perception During SOLIS100 Analog Lunar Mission"

16:35 – 16:50 Przemysław Młynarczyk (Cracow University of Technology, Faculty of Mechanical Engineering) – "Why Is Effective DEM Calibration for Extraterrestrial Regolith Still Out of Reach?"

16:45 – 17:00 Pradeep Padhamnath (AGH University of Krakow) – "Radiation Resistant P-Topcon-Perovskite Tandem Solar Cells for Energy Harvesting in Space"

16:50 – 17:05 Damian Brewczyński (Cracow University of Technology, Faculty of Mechanical Engineering) – "Conceptual Design of an Extraterrestrial Regolith Excavation and Beneficiation Unit System (EREBUS)"

17:00 – 17:15 Silvia Schmalzl (Dr. Schmalzl Consulting) – "Biological Service Layers for Lunar Habitats: A Systems Engineering Framework for Assessing Pioneer Organisms in Future Life-Support Architectures"

17:05 – 17:15 Mateusz Pawłowski (Wrocław University of Science and Technology, Faculty of Mechanical Engineering) – "DEM Model Calibration of Regolith Simulant Using the Dynamic Angle of Repose"

17:15 – 17:30 Nina Bilal (Luleå University of Technology ,Product Innovation) "From Packaging to Resource: Seaweed Biopolymers for Closed-Loop Space Missions"	17:15 – 17:30 Mateusz Kaczmarek (Jagiellonian University, Faculty of Physics, Astronomy and Applied Computer Science) – "Performance Comparision of D-D, D-T and Neutron Sources for Neutron Activation Aanalysis of Martian Regolith"
17:30 – 17:45 Magdalena Król (AGH University of Krakow ,Faculty of Physics and Applied Computer Science) – "Understanding Bone Cell Responses to Ionizing Radiation: A Step Toward Radiation Protection in Future Space Missions"	17:30 – 17:45 Krzysztof Zaraska (Łukasiewicz Research Network-Institute of Microelectronics and Photonics , Kraków Division) – "Plasma-Produced Carbon Monoxide as the Keystone of Martian Industry: An Interactive Simulator Coupling Propellant, Metals, Life Support and Agriculture"
17:45 – 18:00 Natalia Kozyorovska (National Academy of Sciences of Ukraine) "Space-Grade KOMBUCHA: Astrobiological Studies of the Multimicrobial Culture and its Implications for Deep-Space Missions"	17:45 – 18:00 Filip Wylęgała (AGH University of Krakow, Faculty of Space Technologies – "Mechanical Design and Preliminary Tests of the CAPYBARA Parabolic Flight Experiment"

18:00 Student Session Summarizing and Awards – Conference Closing (Hall A - 1.38)

Poster Session (Foyer of building D-17)

Student Session Poster Competition (for authors attending the Pitching your research to diverse audiences workshop
(Chairpersons: Piotr Kulinowski, Anna Krukiewicz –Gacek)

Competition jury: Anna Krukiewicz–Gacek, Piotr Kulinowski, Tadeusz Uhl, Czesław Kapusta, Joanna Pyrkosz–Pacyna



Poster Session: 3–4 September (Thursday and Friday) Foyer near 1.38 – Building D-17

PART I: Thursday 3 September 2026

P1	Nabil MD Bokhtiar Abid (Al-Farabi Kazakh National University)	Harvesting Light Energy in Space and Earth Without Sunlight
P2	Natalia Kowalczyk (AGH University of Krakow, Faculty of Physics and Applied Computer Science)	Data-Driven and Simplified Crank–Nicolson Model for Heat Distribution in Habitat 1.0
P3	Szymon Skrzypczyk (AGH University of Krakow, Faculty of Space Technologies)	Automated Space Weather Monitoring: From Raw Data to Visualization
P4	Vahid Moeinifar (AGH university of Krakow, Faculty of Electrical Engineering, Automatics, Computer Science and Biomedical Engineering)	Robustness of Swarm Consensus Under Faulty or Compromised Rovers
P5	Jacek Kudrys (AGH University of Krakow, Faculty of Space Technologies)	Development of a Communication Protocol for a Lunar Rover Swarm with a Central Base Hub
P6	Cyryl Konstantinovski Puntos (Jagiellonian University, Doctoral School in the Social Sciences)	Hillfort as an Archaeoastronomical Instrument – Case Study in Carpathian Mountains
P7	Franciszek Link (AGH University of Krakow, Faculty of Geology, Geophysics and Environmental Protection)	Bio-Derived Oral-Care Materials for Long-Duration Space Missions: Evaluation of in Situ-Produced Toothpaste Formulations
P8	Adrian Bobowski (AGH University of Krakow, Faculty of Space Technologies)	The Use of Satellite Technologies in Mapping Flood Extent and Analysis of Its Impact on the Availability of Ambulances in Flood Areas
P9	Robin Nitschke (Technical University Berlin, Chair of Space Technology)	Deep Sintering of Lunar Regolith Simulants
P10	Eliza Żmuda (AGH University of Krakow, Faculty of Electrical Engineering, Automatics, Computer Science and Biomedical Engineering)	Astronaut Cognitive Efficiency Under Multi-Stressor Habitat Conditions: Noise, Stress, and Fatigue
P11	Izabela Nosidlak (AGH University of Krakow, Faculty of Geology, Geophysics and Environmental Protection)	Influence of Planetary Mineralogy and Biological Conditioning on the Functional Properties of Self-Organised Mineral–Organic Materials

P12	Kacper Wyczawski (AGH University of Krakow, Faculty of Computer Science)	Ground-Testing a Satellite: Hardware-in-the-Loop Continuous Integration Architecture for Fault-Tolerant Embedded Systems Using Cubesat Space Protocol
P13	Dobrawa Rumszewicz (AGH University of Krakow, Faculty of Physics and Applied Computer Science)	Zero-Copy Inter-Process Communication in Real-Time Audio Systems for Ground-Based Mission Control Centers
P14	Jaijanjeet Kaur (Sapienza University of Rome, Department of Mechanical and Aerospace Engineering)	Influence of Edge-Crack Damage on the Dynamic Behavior of CubeSat Payload Plates Under Launch Vibration
P15	Piotr Daniszewski (AGH University of Krakow, Faculty of Space Technologies)	Investigation of a 1 J Class μ PPT Using a Python-Based Numerical Simulation
P16	Julia Dudzińska (University of the National Education Commission in Krakow, Institute of Polish Philology)	The Earthrise Effect: Psychological Dimensions of the Overview Effect in Art, Photography, and Astronaut Experience
P17	Julia Dudzińska (University of the National Education Commission in Krakow, Institute of Polish Philology)	Writing Through the Void: Astronaut Journals and Diaries as a Narrative Coping Strategy for Isolation
P18	Dobrawa Rumszewicz (AGH University of Krakow, Faculty of Physics and Applied Computer Science)	Satellite-Based Assessment of Agricultural Pesticide Use: Detecting Necessity, Quantity, and Regulatory Compliance from Earth Observation Data
P19	Justyna Kościelniak (AGH University of Krakow, Faculty of Mechanical Engineering and Robotics)	How Sensation Shapes Public View of Science: 3I/ATLAS Communication Case Study
P20	Pierre Delisle (AGH University of Krakow, Faculty of Space Technologies)	Colloid Thruster Demonstrator Design and Preparative Work
P21	Daria Kaim Piotr Siupka (University of Silesia in Katowice, Faculty of Natural Sciences)	Prokaryotic Communities in Bottom Sediments Across Different Levels of Contamination: Community Level Response and Relevance to Astrobiology
P22	Mateusz Żelasko (AGH University of Krakow, Institute of Telecommunications and Cybersecurity)	Bridging Post-Quantum Cryptography and Deep-Space Communications: Reusing HQC Error-Correcting Codes for Ultra-Reliable Links
P23	Stanisław Pietrzyk (AGH-University of Krakow, Faculty of Non-Ferrous Metals)	Astrometallurgy: The Challenges of Extraterrestrial Metal Processing

P24	Johannes Becker (Lunex Technologies GmbH)	Overview and characteristics of Lunex Simulants for Lunar and Martian Research
P25	Yi Hung Li (Orbit Node Global Limited)	Deep Space Compute Index: A Policy-Driven Asynchronous Automation Trigger and Supervisory Control Framework under Extreme Lunar Environments
P26	Adam Bujak (AGH University of Krakow, Faculty of Materials Science and Ceramics)	Daily Report Writing as a Coping Mechanism in Isolated Analog Habitats
P27	Filip Kwidziński (AGH University of Krakow, Faculty of Physics and Applied Computer Science)	Supervision System for a Payload Computer on the 2U PUCHACZ Satellite
P28	Agnieszka Talik (AGH University of Krakow, Faculty of Space Technologies)	Mechanical Characterization of PHB and Lunar Regolith Simulant Composites for ISRU in Lunar Construction
P29	Kaja Skubała (Jagiellonian University, Faculty of Biology, Institute of Botany)	Maintaining Functional Integrity Under Simulated Mars-like Conditions: Fungi-Dominated Biocrusts
P30	Marta Lubszczyk (AGH University of Kraków, Faculty of Space Technologies)	Thermodynamic Modeling and Processing of Transparent MgO–Y ₂ O ₃ Ceramics for Space Optical Applications
P31	Aleksander Kopyto (AGH University of Krakow, Faculty of Physics and Applied Computer Science)	Development of the LPMT – Laser Polarisation Modulation Transceiver at AGH Skylink
P32	Michał Duszak (Opole University of Technology, Faculty of Computer Science)	A Gentle Introduction to Defending Deep Space Debris Detectors from Data Poisoning with Feature Attribution Techniques
PART II - Friday 4 September 2026		
P33	Magdalena Machacka (Opole University of Technology, Faculty of Computer Science)	Neural Debris Removal: Continuous Unlearning of Backdoors in Orbital Streak Detectors
P34	Jacek Ulrych, Andrzej Majorczyk (AGH University of Krakow, Faculty of Physics and Applied Computer Science)	MXene Material and its New Modification

P35	Adriana Niepala (Opole University of Technology, Computer Science)	Benchmarking Deep Learning Models for Radio Frequency Interference Detection in Sentinel-1 Quicklook Imagery
P36	Jakub Truchan (AGH University of Krakow, Faculty of Geo-Data, Geodesy, and Environmental Engineering)	The Multi-Stage Sieving Mechanism for Beneficiation of the Lunar Regolith
P37	Maria Kordas (AGH University of Krakow, Faculty of Mechanical Engineering and Robotics)	An Excavating System Designed to Collect, Store and Transport Lunar Regolith
P38	Mikołaj Głód (AGH University of Krakow, Faculty of Space Technologies)	High-Resolution Respirometry of Whole-Daphnia Homogenates: A Pilot Study with Resveratrol and Curcumin
P39	Nasir H.R. Syed (AGH University of Krakow, Faculty of Mechanical Engineering and Robotics, Department of Robotics and Mechatronics)	A Damage Index Approach for Lamb Wave Based Damage Detection in Thin-walled Structures Under Temperature Variations
P40	Tymoteusz Maj (AGH University of Krakow, Department of Photogrammetry, Remote Sensing of Environment and Spatial Engineering)	Effectiveness of Blue-Green Infrastructure in Moderating Urban Heat: Remote Sensing and Field Evidence from the Upper Silesian Metropolis
P41	Katarzyna Klęczek (AGH University of Krakow, Faculty of Humanities)	Technical Competence and Network Stability Analysis in a Lunar Analog Mission
P42	Katarzyna Klęczek (AGH University of Krakow, Faculty of Humanities)	Who Stays in the Center? TIPI, Formal Command, and Morale dynamics in an ICE Crew
P43	Maksymilian Boiar (AGH University of Krakow)	From Framework to Flight: A Reusable Software Stack for the 2U Puchacz CubeSat
P44	Maja Grucela (Warsaw University of Technology, Students' Space Association)	Power Budget Assessment of an Active Heating System for a Stratospheric Gondola: Feasibility of Innovative Power Sources for Long-Duration Missions
P45	Magdalena Mras, Adam Włodarczyk (Warsaw University of Technology, Students' Space Association)	Design and Manufacturing of Environmental Control System Gondola for Stratospheric Astrobiology Research
P46	Marcello Matteo Declich (Politecnico di Milano, DEIBO)	Beyond Frozen GeoFMs: New Perspectives on Drift, Adaptation, and Forgetting

P47	Bartłomiej Roj (AGH University of Krakow, Department of Photogrammetry, Remote Sensing of the Environment and Spatial Engineering)	Landsat Assessment of Surface Urban Heat Anomalies and Land Cover Controls in Tarnów, 2021–2025
P48	Mateusz Olszewski (AGH University of Krakow, Institute of Telecommunications and Cybersecurity)	Toward a Gamified Methodology for Studying Short, Lunar-Relevant Communication Delays
P49	Valadar Harelikau (AGH University of Krakow, Faculty of Electrical Engineering, Automatics, Computer Science and Biomedical Engineering)	Application of a Fringing-Field Capacitive Sensor for Analyzing Regolith Distribution Inside a Pipe
P50	Kacper Marcichowski (AGH University in Krakow, Faculty of Mechanical Engineering and Robotics)	Gravitropism and Phototropism in Different Gravity Conditions
P51	Kacper Ciołkowski (AGH University of Krakow, Space Technology Centre)	Electrohydrodynamic (EHD) Propulsion for Manouvering and Altitude Control on an Unmanned Balloon Platform
P52	Eliza Żmuda (AGH University of Krakow, Astrobio AGH)	Project THOR (Tremor Observation and Response): Post-Flight Analysis of a Custom Biological Payload on the PERUN Suborbital Rocket
P53	Natalia Michalik (AGH University of Krakow, Faculty of Physics and Applied Computer Science)	Lunar Regolith Composite as a Shield Against X-rays
P54	Mateusz Żelasko (AGH University of Krakow, Institute of Telecommunications and Cybersecurity)	Dynamic Traffic Management and Adaptive Routing for Hybrid LEO-Terrestrial Quantum Key Distribution Networks
P55	Aristeidis Georgoulas (Aristotle University of Thessaloniki (ΑΠΘ), Faculty of Electrical and Computer Engineering (THMMY))	Continuous Environmental Monitoring of a Crewed Analog Habitat with a Low-Cost Sensor Node: Diurnal CO ₂ Dynamics and Field Reliability
P56	Kacper Wiercioch (AGH University of Krakow, Faculty of Mechanical Engineering and Robotics)	Autonomous Bioluminescent Lighting System for Space Habitats
P57	Katrina Yzabel Baladjay (Luleå University of Technology, Department of Computer Science, Electrical and Space Engineering) – poster presented by Agata Harasymczuk	SKRRT: SKilltest on Rhythm and Reaction Time of Astronauts in the Analog Astronaut Training Center (NAWA Mission 112)

P58	Jakub Prygiel (AGH, Faculty of Computer Science)	Behavioral Performance and Task-Related EEG Activity during Complex Visuospatial Problem Solving across a Multi-Day Analog Isolation Mission
P59	Natalia Skowron (AGH University of Krakow, Faculty of Mechanical Engineering and Robotics)	Radish Seedling Resilience to Electric Fields and Ascorbic Acid in Space Habitats
P60	Monika Kula-Maximenko (The Franciszek Górski Institute of Plant Physiology Polish Academy of Sciences)	Optimizing LED Light Spectra for Microalgal Superfood Production in Bioregenerative Life-Support Systems
P61	Mohamed Ahmed (AGH University of Krakow, Faculty of Space Technologies)	Miniature Rotor System for Optical and RF Space Communications
P62	Maja Staniewska (Warsaw University of Technology)	Space for Defence: Feasibility of Space-Mining Critical Materials for Military Purposes
P63	Luis Raul Tovar Contreras (AGH Faculty of Space Technologies, Space Engineering)	Space-Tested Nitinol Artificial Muscle: Thermal Characterization of a Biomimetic Compliant Mechanism on MISSE-19 (ISS)
P64	Zainab Abdullah Waheed, Raad Radhi (Middle Technical University-Baghdad)	Synergistic Synthesis of a Hydrogen-Rich "Bio-Shield" Composite via In-Situ Resource Utilization (ISRU): Bridging the Gap Between Orbital Waste Management and Deep-Space Radiation Protection
P65	Gabriela Florek (Faculty of Pharmacy, Jagiellonian University Medical College)	Effect of Altered Gravity on Germination and Phytohormone Profile of Kale and Red Clover Sprouts
P66	Ibraheem Muhammad (Warsaw University of Technology)	Design and Modelling of a 75 W Hall Effect Thruster Based on Krypton Propellant
P67	Monika Stanek (Jagiellonian University Medical College, Department of Microbiology)	Human Footprints in Extreme Environments: Microbial Dispersion Around an Arctic Research Station in the Context of Future Space Habitats
P68	Daria Podstawczyk (Wroclaw University of Science and Technology, Faculty of Chemistry)	Compatibility of Struvite Crystallization and Microalgae in Nutrient-Concentrated Wastewater: Toward Bioregenerative Life Support