

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 Kawiory 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 |



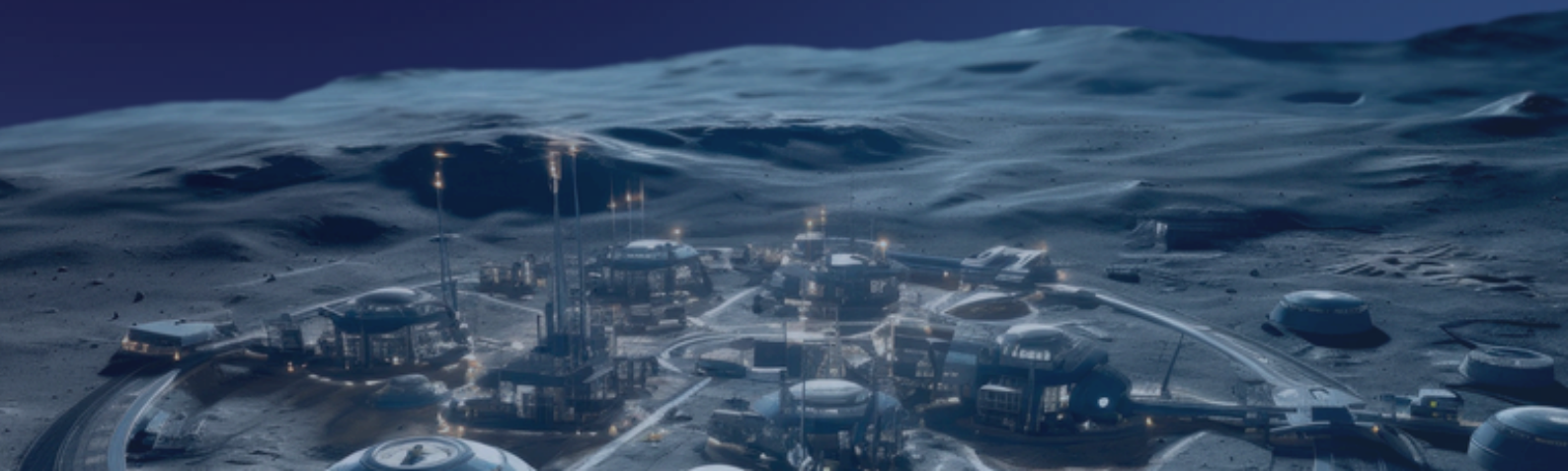
DAY 0 – WEDNESDAY, 2 SEPTEMBER 2026

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



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DAY 0 – WEDNESDAY, 2 SEPTEMBER 2026

19:00 – 22:00

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

➡ **FULL PROGRAM** ⬅

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

Special Discussion Panels by Izabela Albrycht and
Justyna Topolska

18:30 – 19:00

Preregistration and welcome coffee (Kościuszko
Mound, Al. Waszyngtona 1, 30-204 Kraków)

19:00 – 19:05

Opening and Welcome

19:05 – 19:30

Space × Defence Startup Showcase

19:30 – 20:10

Panel: „Europe Needs Space-Defense. Who Will Build It?”

20:10 – 21:30

Networking evening

IXTH SPACE RESOURCES CONFERENCE

01

DAY 1 – THURSDAY, 3 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 – 8:45	Registration and Welcome Coffee
8:45 – 10:00	Opening Session: Hall A (1.38)
8:45 – 8:50	Conference Chairs – prof. Jerzy Lis (Rector of AGH University of Krakow), prof. Tadeusz Uhl (Dean of the Faculty of Space Technologies AGH), dr Marta Ewa Wachowicz (Polish Space Agency) – Opening and Welcome
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 – Angel Abbud Madrid (Colorado School of Mines) – "Resources Beyond Earth: Enabling Future Exploration and the New Space Economy"
9:30 – 10:00	Plenary Lecture – 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

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01

DAY 1 – THURSDAY, 3 SEPTEMBER 2026

10:20 – 12:00 (Hall A – 1.38) Session – Space Resources Chairperson – Jakub Ciężela	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) Session – Planetary Missions - Exploration and Exploitation Chairperson – Tadeusz Uhl
Jakub Ciężela (TWARDA PAN) – "Lunar Resource Prospecting: From Detection and Characterization to Utilization"	10:20 – 10:45 Martin Tajmar (AGH University of Krakow, Faculty of Space Technologies) – "Landscape of Innovative Propulsion Technologies"	10:20 – 10:35 Waldemar Pichór (AGH University of Krakow, Faculty of Space Technologies) – "From Regolith to Infrastructure: Integrated Utilization of Martian Resources for Future Human Exploration"
10:35 – 10:50 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 Przemysław Młynarczyk (Cracow University of Technology, Faculty of Mechanical Engineering) – "Why Is Effective DEM Calibration for Extraterrestrial Regolith Still Out of Reach?"
	11:00 – 11:10 Przemysław Turos (Symkom) – "Dogfight on Orbit – Thrusters Modelling, Maneuvers Design, Simulation and Operations with Use of STK and ODTK"	
	11:10 – 11:20 Symkom Partner (title TBA)	

10:50 – 11:05 Piotr Kulinowski (AGH University of Krakow) – "Concept of a Flexible-Path Bucket Conveyor for Icy Regolith Transport from Lunar Craters"	11:20 – 11:30 Aleksander Kopyto (AGH University of Krakow, Faculty of Physics and Applied Computer Science) – "The PIRX Rocket – Systems Engineering Perspective"	10:50 – 11:05 Damian Brewczyński (Cracow University of Technology, Faculty of Mechanical Engineering) – "Conceptual Design of an Extraterrestrial Regolith Excavation and Beneficiation Unit System (EREBUS)"
11:05 – 11:20 Filip Wylęgała (AGH University of Krakow, Faculty of Space Technologies) – "Factors Affecting Lunar Regolith Simulant Behavior: Wall Material and Charging"	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"	11:05 – 11:20 Mateusz Pawłowski (Wrocław University of Science and Technology, Faculty of Mechanical Engineering) – "DEM Model Calibration of Regolith Simulant Using the Dynamic Angle of Repose"
11:20 – 11:35 Robin Nitschke (Technical University Berlin, Chair of Space Technology) – "Tailoring Lunar Regolith Simulants for Mobile Selective Laser Melting and Site-Specific ISRU Construction – MOONRISE"	11:40 – 11:50 Piotr Mamczura (AGH University of Krakow, Faculty of Space Technologies) – "Manufacturing and Preliminary Characterization of an LP/SP Electrically Controlled Solid Propellant"	11:20 – 11:35 Mateusz Kaczmarek (Jagiellonian University, Faculty of Physics, Astronomy and Applied Computer Science) – "Performance Comparison of D-D, D-T and Neutron Sources for Neutron Activation Analysis of Martian Regolith"
11:35 – 11:45 Natalia Mętrak (Wojskowa Akademia Techniczna, Instytut Optoelektroniki) – "Optical and Algorithmic Detection of Helium-3 in Gases Released from Lunar Regolith"	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"	11:35 – 11:50 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"
11:45 – 12:00 Sumit Goski (Minors) – "SAMA: An Evidence-Readiness Framework for Asteroid Spectroscopy and Space-Resource Prospecting"		11:50 – 12:00 Filip Wylęgała (AGH University of Krakow, Faculty of Space Technologies) – "Mechanical Design and Preliminary Tests of the CAPYBARA Parabolic Flight Experiment"

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 Extream 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.	13:00 – 13:25 Tomasz Zajkowski, Aleksandra Woltyńska (AGH University of Krakow , Faculty of Space Technologies) – "Variability of the Antarctic Lichen Microbiome in a Trophic and Spatio-Temporal Gradient (Maritime Antarctica)"
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"		13:25 – 13:40 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"
13:40 – 13:55 Karol Seweryn (Space Research Centre PAS, LMRS, AGH University of Krakow, Faculty of Space Technologies) – "Outcomes from Moon Harvesting project realization"	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).	13:40 – 13:55 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"

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 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"
14:10 – 14:25 Xiaoqian Gao (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 (sponsored by Symkom) with Coffee (Chairpersons: 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 – 15:40 Magdalena Ostasz (AGH University of Krakow) – "Cybersecurity in Space Sector – Introduction and Current Legal Situation in EU"	15:20 – 15:35 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"	15:20 – 15:35 Michał Zachara (KPLabs) – "Intuition-1 – on-Board Hyperspectral Data Processing"
15:40 – 16:00 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"	15:35 – 15:50 Daniel Więzik (SatRev) (Title TBA)
	15:50 – 16:05 Bartosz Malinowski (CBK PAN) – "Remarks on Regulation of Space Mining Activity in Light of the Polish Act on Space Activity in the European Context"	
16:00 – 16:20 Mariusz Głąbowski (PUT, Poznań) – "The Threat Landscape and Systemic Risk"	16:05 – 16:20 Katarzyna Franczak (Franczak Institute, Center for Space Law and Policy) – "Beyond Licensing: From Regulatory Control to Fostering Innovation"	15:50 – 16:05 PW SAT 3 (TBC)
16:20 – 16:40 Andrzej Olchawa (Vision Space) – "Cases Involving Software and Ground Vulnerabilities"	16:20 – 16:35 Francesco Ventura (CROWN Group INC) – "A Governance Framework for Planetary Defense: Leadership, Cooperative Cost Allocation, and Article IX Sustainability Constraints"	16:05 – 16:20 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"

16:40 – 17:00 Discussion – "Cybersecurity Challenges in Space Technologies"	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”	16:20 – 16:35 Piotr Bylina (AGH University of Krakow, Satlab) – "Student-built cubesat for multispectral imaging with optical communication module – PUCHACZ mission overview"
	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"	16:35 – 16:50 Jakub Chachowski (AGH University of Krakow, SatLab AGH) – "Two Months, Two Selfies – a Retrospective on "HYPE" 1P PocketQube Satellite Mission"
		16:50 – 17:05 Ayelet Weizman (Tel Aviv University, Space Engineering Center) – "TEVEL: Student-Built Nanosatellites as Scientific Missions and Educational Ecosystems"

19:00 – 22:00

Gala Dinner, Space Bingo

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 – 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) – "Starlab: Shaping the Future of the NewSpace LEO Economy and In-Space R&D" + Q&A session
10:00 – 10:30	Poster Competition part II (sponsored by Symkom) with coffee TBC (Chairpersons: Piotr Kulinowski & Anna Krukiewicz – Gacek)

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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 – 10:50 Dirk Neefs (EIOSHS, Scientific Department) – "SOMBA.Systematic Oral and Brain Gut Axis"	10:30 – 10:45 Maciej Krzyżanowski (CloudFerro) – Title TBA	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 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"	
10:50 – 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"	10:45 – 11:00 Hredya MaryShajimon (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"

11:15 – 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"	11:00 – 11:15 Antoni Żywczak (AGH University of Krakow, Academic Centre for Materials and Nanotechnology) - "Quasicrystals as Promising Hydrogen Energy Storage Materials for Space Missions"
11:30 – 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"	11:15 – 11:30 Gabriela Opita (AGH University of Krakow, Physics and Applied Computer Science) – "Mössbauer Spectroscopy in Space Materials Investigation"
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"	11:30 – 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"
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"		11:45 – 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"

	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"	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"
		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)

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

12:40 – 13:10 **Poster Competition part II** (sponsored by Symkom) with coffee **TBC**
(Chairpersons: Piotr Kulinowski & Anna Krukiewicz – Gacek)

13:10 – 14:00 **Space Discussion Panel** (Main Hall A – 1.38)

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)

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 Bikhiti (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 Wiktoria Ilczyszyn (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

15:40 – 16:40 Coffee Break and Poster Session + Poster Competition (sponsored by Symkom) Part II
(Chairperson: Anna Krukiewicz – Gacek & Piotr Kulinowski) **TBC**

16:40 – 18:20 (Hall A – 1.38) Session – Habitats, Bioastronautics & Life Support Systems Chairperson – Agata Harasymczuk	16:40 – 18:20 (Hall C – 1.19) Space Structures and Materials Design and Operations Chairperson – Waldemar Pichór
16:40 – 16:55 Małgorzata Siekańska (University Of Physical Culture in Krakow) – "Psychophysiological Monitoring of Analog Astronauts During a One-Week Habitat Mission: a Pilot Study"	16:40 – 16:55 – Agata Bisping (AGH University of Krakow, Faculty of Humanities) – "Human Remains as an Edge Case for Circular Resource Design in Space"
16:55 – 17:10 Bartłomiej Smaga (AGH University of Krakow) – "Possibilities of Applying the Constructed Wetlands in Lunar Base Conditions"	16:55 – 17:10 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"
17:10 – 17:25 Stanisław Sękara (AGH University of Cracow, Faculty of Space Technologies) – "BIOSIGNATIME: A Multimodal Approach to Investigating Subjective Time Perception During SOLIS100 Analog Lunar Mission"	17:10 – 17:25 Dawid Mrozek (Silesian University of Technology, Faculty of Civil Engineering) – "Numerical Analysis of Structural Alkali-Activated Regolith Partitions in Lunar Lava Tubes"
17:25 – 17:40 Pradeep Padhamnath (AGH University of Krakow) – "Radiation Resistant P-Topcon-Perovskite Tandem Solar Cells for Energy Harvesting in Space"	17:25 – 17:40 Magdalena Mrozek (Silesian University of Technology, Faculty of Civil Engineering) – "Air Permeability of Alkali-Activated Regolith Based Materials for Lunar Construction"
17:40 – 17:55 Silvia Schmalzl (Dr. Schmalzl Consulting) – "Biological Service Layers for Lunar Habitats: A Systems Engineering Framework for Assessing Pioneer Organisms in Future Life-Support Architectures"	17:40 – 17:55 Marcin Kitala (AGH University of Krakow, Faculty of Space Technologies) – "Vernacular Architecture as a Blueprint for Extraterrestrial Habitats"
17:55 – 18:10 Nina Bilal (Luleå University of Technology, Product Innovation) "From Packaging to Resource: Seaweed Biopolymers for Closed-Loop Space Missions"	17:55 – 18:10 Johannes Becker (Lunex technologies GmbH) – „Advances in Regolith Simulants for European Lunar and Martian Research”

18:10 – 18:20 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"

18:10 – 18:25 Abinaya Rengarajan (AGH University of Krakow, Materials Science and Ceramics) – "Ambipolar Thermoelectric Energy Conversion in Graded $\text{MoS}_2/\text{MoS}_2\text{-MoO}_2$ Films: A Single-Material Route to Bidirectional Power Harvesting in Space Thermal Environments"

18:20 – 18:30 Natalia Kozyrovska (National Academy of Sciences of Ukraine) "Space-Grade KOMBUCHA: Astrobiological Studies of the Multimicrobial Culture and its Implications for Deep-Space Missions"

18:15 - 18:30 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"

18:30 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
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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
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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
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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
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P24	Johannes Becker (Lunex Technologies GmbH)	Overview and characteristics of Lunex Simulants for Lunar and Martian Research
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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
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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
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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
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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
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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