# 14th Asian Microgravity symposium: 1- 6 December 2024
# Event Schedule

| Sun 01 Dec | | | | |
|---|---|---|---|---|
| Time | | | Venue: Auditorium | |
| 17:00 | 19:00 | 2 hr | | Registration |
| *19:00* | *21:00* | *2 hr* | | *Welcome dinner* |

| Mon 02 Dec | | | | |
|---|---|---|---|---|
| Time | | | Venue: Auditorium | |
| 09:00 | 12:00 | 3 hr | | Registration |
| 09:00 | 09:10 | 10 min | | Inauguration |
| 09:10 | 09:20 | 10 min | | AMS 2024 Welcome address, Amit Kumar |
| | | | | |
| 09:20 | 09:30 | 10 min | | ExTeM Introduction, Sathyan Subbiah |
| 09:30 | 10:20 | 50 min | AMS001 | **Plenary Talk 1 :** Indian space roadmap - opportunities for microgravity research - Dinesh Kumar Singh |
| *10:20* | *10:35* | *15 min* | | *Morning Tea Break* |
| 10:35 | 11:25 | 50 min | AMS670 | **Plenary Talk 2 :** Study for materials sciences using electrostatic levitation - Geun Woo Lee |
| 11:25 | 12:15 | 50 min | AMS003 | **Plenary Talk 3 :** Microgravity fluid science research in the National Microgravity Laboratory/CAS - LI Kai |
| 12:15 | 13:05 | 50 min | AMS999 | **Plenary Talk 4 :** Role of Microgravity Utilization in Combustion Research - Osamu Fujita |
| *13:05* | *14:05* | *1 hr* | | *Lunch* |
| 14:05 | 14:55 | 50 min | AMS002 | **Plenary Talk 5 :** Research highlights of JAXA Kibo utilization - Izumi Yoshizaki |
| 14:55 | 15:45 | 50 min | AMS236 | **Plenary Talk 6 :** The scientific vision of the project wgFBCE-CSS - Jian-Fu Zhao |
| *15:45* | *16:00* | *15 min* | | *Evening Tea Break* |
| 16:00 | 16:50 | 50 min | AMS789 | **Plenary Talk 7 :** High Temperature Materials Racks and Materials Research Progress in Chinese Space Station - Xuechao Liu |
| 16:50 | 17:40 | 50 min | AMS004 | **Plenary Talk 8 :** The German microgravity science program - Tobias Saltzmann |

| Tue 03 Dec | | | | |
|---|---|---|---|---|
| Time | | | Venue: Auditorium | |
| 09:00 | 09:50 | 50 min | AMS257 | **Plenary Talk 9 :** Mammalian reproduction and embryonic development: from ground to space - Xiaohua Lei |
| *09:50* | *10:05* | *15 min* | | *Morning Tea Break* |
| Time | | | Venue: Auditorium | |
| Session 1A: Life Science and Biotechnology - 1 | | | | |
| 10:05 | 10:30 | 25 min | AMS573 | **Keynote Talk :** Past, Present, and Future of Ground-Based Microgravity Simulation Systems: Focusing on the 3D Random Positioning Machine (RPM) - Han Sung Kim |
| 10:30 | 10:55 | 20 min | AMS994 | **Keynote Talk :** Protein nanocages promote osteogenesis and prevent cytoskeletal damage from oxidative stress induced under microgravity -Swathi Sudhakar |
| 10:55 | 11:15 | 20 min | AMS185 | Mechanotransduction and gene expression in microgravity: an integrated MechSigFlow pipeline for bio-fluid dynamics and T-cell signaling - Anirudh Murali |
| 11:15 | 11:35 | 20 min | AMS195 | Development of 3D RPM Applicable to Ultrasound Stimulation and Evaluation of the Effects of Microgravity and Ultrasound Stimulation on MC3T3-E1 Cells - Doyong Kim |
| 11:35 | 11:55 | 20 min | AMS263 | Microbial Online Detection Experiment on Chinese Space Station - Fangwu Liu |
| 11:55 | 12:15 | 20 min | AMS308 | Advancing in-Space biomanufacturing of Bacteriorhodopsin in Halobacterium salinarum under microgravity by using oxidative stress-based strategy - Rahul S |
| 12:15 | 12:35 | 20 min | AMS652 | Mechanisms of gravity sensation: Influence of spaceflight and contact stimuli on neuromuscular system and gene expression in C. elegans - Jin Lee |
| 12:35 | 12:55 | 20 min | AMS962 | Responses of Bacterial Pathogens to Microgravity Environments:From Antibiotic Sensitivity to Virulence - Robert Mitchell |
| *12:55* | *13:55* | *1 hr* | | *Lunch* |
| Session 2A : Heat and Fluid Physics - 1 | | | | |
| 13:55 | 14:20 | 25 min | AMS201 | **Keynote Talk :** Research Progress on Condensation Enhancement Experiment in China's Space Station - Bo Xu |
| 14:20 | 14:45 | 25 min | AMS948 | **Keynote Talk :** Modelling side wall damping in confined Faraday instability systems - Diwakar S Venkatesan |
| 14:45 | 15:05 | 20 min | AMS250 | Utility of Lubricant Infused Surfaces for Enhancing Droplet Removal in Microgravity Applications - Tonmoy Sharma |
| 15:05 | 15:25 | 20 min | AMS264 | Enhancing Boiling Performance in Adverse Gravity Conditions with Imidazolium-Based Ionic Liquid Additives - Avinash Upadhyay |
| 15:25 | 15:45 | 20 min | AMS316 | Design of thermal passive control system for rotating elements of Micro Dual Gimbal Antenna (DGA) deployed on small LEO satellite - Vinti Bhatia |
| 15:45 | 16:05 | 20 min | AMS426 | Understanding and Optimizing the Surface Activity of Ethanol-Water Mixtures for Microgravity Applications - Rajnish Azad |
| 16:05 | 16:25 | 20 min | AMS032 | Investigation of aqueous butanol solution as potential fluid to enhance boiling heat transfer for microgravity applications - Md Qaisar Raza |
| *16:25* | *16:40* | *15 min* | | *Evening Tea Break* |
| Session 3A: Life Science and Biotechnology - 2 | | | | |
| 16:40 | 17:05 | 25 min | AMS379 | **Keynote Talk :** Life Science Experiment Facilities on the Chinese Space Station - Tao Zhang |
| 17:05 | 17:25 | 20 min | AMS740 | µBioSat: A platform for microbial analysis in space - Shreyaans Jain |
| 17:25 | 17:45 | 20 min | AMS805 | Eggshell Membrane as potential preventive medicine for pulmonary fibrosis - Miho Shimizu |
| 17:45 | 18:05 | 20 min | AMS921 | Exploration of Biomaterials for Preventing Muscle Atrophy with Space Experiment - Siyun Lee |
| 18:05 | 18:25 | 20 min | AMS934 | Impact of seed exposure to simulated microgravity on growth and development in tomato (Solanum Lycopersicon L.) - Ram Ambiya |

| Tue 03 Dec | | | | |
|---|---|---|---|---|
| Time | | | Venue: Auditorium | |
| 09:00 | 09:50 | 50 min | AMS257 | **Plenary Talk 9 :** Mammalian reproduction and embryonic development: from ground to space - Xiaohua Lei |
| *09:50* | *10:05* | *15 min* | | *Morning Tea Break* |
| Time | | | Venue: Hall 3 | |
| **Session 1B: Combustion - 1** | | | | |
| 10:05 | 10:30 | 25 min | AMS082 | **Keynote Talk :** Development of Experimental Payload for Studying Turbulent Transition of Non-Premixed Jet Flames under Microgravity - Wenjun Kong |
| 10:30 | 10:50 | 20 min | AMS092 | Extinguishing Gas Jet Flame Experiments Aboard the Chinese Space Station - Yuzhe Wen |
| 10:50 | 11:10 | 20 min | AMS164 | Bayesian MCMC estimation of the limiting oxygen concentrations for B- LDPE tubes across various gravity levels - Yuxuan Ma |
| 11:10 | 11:30 | 20 min | AMS598 | Effect of oxygen concentration, pressure, and opposed flow velocity on the flame spread along thin PMMA sheets: Experiments and Numerical modelling - Arvind Bharath S R |
| 11:30 | 11:50 | 20 min | AMS290 | Effect of insulation thicKYess on the overload ignition of electrical wires in normal and microgravity - Yan Gu |
| 11:50 | 12:10 | 20 min | AMS296 | A numerical modelling of flame spread over insulated electrical wire - Naresh Kambam |
| 12:10 | 12:30 | 20 min | AMS125 | On Simulating non-premixed flames in microgravity by employing sub-atmospheric pressures - Yuhang Chen |
| 12:30 | 12:50 | 20 min | AMS390 | Numerical Investigation of the Effect of Strain Rate on the Flammability of Hydrofluorocarbons - Yusuke Konno |
| *12:50* | *13:55* | *1:05 hr* | | *Lunch* |
| **Session 2B: Construction & Manufacturing in space - 1** | | | | |
| 13:55 | 14:20 | 25 min | AMS327 | **Keynote Talk :** Cold Atoms in Microgravity - Liang Liu |
| 14:20 | 14:40 | 20 min | AMS104 | Research on the role of microgravity and other extraterrestrial environments in reconstructing worldviews as an artistic activity -Soyoung Moon |
| 14:40 | 15:00 | 20 min | AMS965 | Design, construction, and on-orbit measurement of the power distribution unit for space utilization system of China space station - Liangyu Bai |
| 15:00 | 15:20 | 20 min | AMS496 | Towards sustainable extra-terrestrial construction materials using biopolymers - Nitin Gupta |
| 15:20 | 15:40 | 20 min | AMS501 | Heat Pump for Space Station Active Thermal Control: Merits and Challenges - ARNAB LAHIRI |
| 15:40 | 16:00 | 20 min | AMS819 | Production of SiC from Lunar regolith simulant - Nithyasrimurugan S K |
| 16:00 | 16:20 | 20 min | AMS235 | Navigating the Stars: A Comparative Analysis of ISRO's Human Spaceflight Policy in the Global Space Exploration Landscape - Chinmay Kumarpatra |
| *16:20* | *16:40* | *20 min* | | *Evening Tea Break* |
| **Session 3B: Material Sciences - 1** | | | | |
| 16:40 | 17:05 | 25 min | AMS380 | **Keynote Talk :** Effect of Oxygen on Surface Tension of Liquid Metals and Alloys - Joonho Lee |
| 17:05 | 17:25 | 20 min | AMS873 | Measurement Of Metal Foam Expansion In A Drop Tower - Neelabh Menaria |
| 17:25 | 17:45 | 20 min | AMS067 | Containerless Processing of High Temperature Materials on the China Space Station - Jianding Yu |
| 17:45 | 18:05 | 20 min | AMS991 | Impact of microgravity on droplet transfer in the GMAW-Based DED-Arc process under low welding currents - Adhithya Plato SidharthArunachalam |
| 18:05 | 18:25 | 20 min | AMS348 | Multiple crystallization pathways of extremely supersaturated aqueous solution droplets on Electrostatic Levitator - Yong ChanCho |

| Tue 03 Dec | | | | |
|---|---|---|---|---|
| Time | | | Venue: Auditorium | |
| 09:00 | 09:50 | 50 min | AMS257 | **Plenary Talk 9 :** Mammalian reproduction and embryonic development: from ground to space - Xiaohua Lei |
| *09:50* | *10:05* | *15 min* | | *Morning Tea Break* |
| Time | | | Venue: Hall 4 | |
| **Session 1C: Poster** | | | | |
| 10:05 | 18:05 | 8 hr | AMS690 | Algae in Space: How Microgravity affects edible microalgae - Prachi Nawkarkar |
| | | | AMS291 | Customised hardware for Fruit Fly Experiments onboard Gaganyaan Flights - AKHIL MADHAVAN K |
| | | | AMS997 | Advancement in Protein Crystallization in Drug Discovery and Development through Microgravity Research - Dhavalkumar Solanki |
| | | | AMS673 | Design and Realization of Zero-g backup support fixture for Satellite Reflectors RF characterization - Shashank Srivastava |
| | | | AMS016 | Influence of Simulated Microgravity on the Courtship and Negative Geotaxis Behaviour of Drosophila melanogaster - G Sreejalekshmi |
| | | | AMS034 | Investigating the oxidative stress response to improve phycocyanin production in Synechococcus elongatus UTEX 2973 under simulated microgravity conditions - Radhika K |
| | | | AMS998 | Space manufacturing and space factories - Anvi N. Naphade |
| | | | AMS976 | Characterization of Ions in Martian Soil Simulants Using an Interdigitated Capacitive Sensor - Hrithik Krishna Raj |

| Wed 04 Dec | | | | |
|---|---|---|---|---|
| Time | | | Venue: Auditorium | |
| 09:00 | 09:50 | 50 min | AMS981 | **Plenary Talk 10 :** Microgravity Research at ZARM's Drop Tower Facilities - Thorben Könemann |
| *09:50* | *10:05* | *15 min* | | *Morning Tea Break* |
| Time | | | Venue: Auditorium | |
| **Session 4A: Ground-based Microgravity Research-1** | | | | |
| 10:05 | 10:30 | 25 min | AMS617 | **Keynote Talk :** HFE-7100 spray cooling under microgravity: the liquid film dynamics and heat transfer - Xiao Zhao |
| 10:30 | 10:50 | 20 min | AMS280 | Experimental study of flame spread behaviour over planar polymer-metal- polymer composite material in normal gravity and micro-gravity environments - Prema Prescillat |
| 10:50 | 11:10 | 20 min | AMS987 | HUST Drop Tower and Its Performance Test - Liang Wang |
| 11:10 | 11:30 | 20 min | AMS310 | Converting the Gifford Shaft in KGF into a Microgravity Drop Tube - Jaya Krishna Meka |
| 11:30 | 11:50 | 20 min | AMS415 | Research progress of low-frequency vibration isolation facilities for high - precision inertial sensors performance test - Cheng Ma |
| 11:50 | 12:10 | 20 min | AMS546 | Microgravity-induced alterations in emulsion characteristics: An investigation into its appearance, morphology, and stability - Sibsankar Palit |
| 12:10 | 12:30 | 20 min | AMS146 | Semi-physical Simulation of the Sensitive Probe for Ground Test of Space Electrostatic Accelerometer - Shaobo Qu |
| 12:30 | 12:50 | 20 min | AMS671 | Normal gravity to microgravity transition of flame spreading over thin cylindrical fuels in a drop test - Manu B V |
| *12:50* | *13:50* | *1 hr* | | *Lunch* |
| **Session 5A: Life Science and Biotechnology-3** | | | | |
| 13:50 | 14:15 | 25 min | AMS436 | **Keynote Talk :** Seed-to-seed growth of rice on the Chinese space Station - HuiQiong Zheng |
| 14:15 | 14:35 | 20 min | AMS975 | Immunoprotective Role of the MAPK/PMK-1 Pathway in C. elegans in Response to Spaceflight - Alfredo Jr. Alcantara |
| 14:35 | 14:55 | 20 min | AMS992 | Can Lunar Soil Nurture Plant Growth? - Ravikumar Hosamani |
| 14:55 | 15:15 | 20 min | AMS541 | An investigation into the function of AtLAZY1 in modulating the interplay between gravitropic and phototropic signaling pathways in Arabidopsis - Peipei Xu |
| 15:15 | 15:35 | 20 min | AMS024 | Microgravity effects on Human Thermoregulation - Chithramol M K |
| 15:35 | 15:55 | 20 min | AMS734 | Brain Artery in Microgravity (BRAIM): Design and Development - Harikrishna M Menon |
| 15:55 | 16:15 | 20 min | AMS467 | Increasing transfection efficiency by electroporation in a gravity-changing environment - Younghoon Lee |
| *16:15* | *16:30* | *15 min* | | *Evening Tea Break* |
| **Session 6A: Industry** | | | | |
| 16:30 | 16:50 | 20 min | | **Industrial Talk 1 :** Agnikul |
| 16:50 | 17:10 | 20 min | | **Industrial Talk 2 :** Eplane |
| 17:10 | 17:30 | 20 min | | **Industrial Talk 3 :** Vellon |
| 17:30 | 17:50 | 20 min | | **Industrial Talk 4 :** Inbound Aerospace |
| 17:50 | 18:10 | 20 min | | **Industrial Talk 5 :** Axiom Space |
| *19:30* | *21:30* | *2 hr* | | *Banquet* |

| Wed 04 Dec | | | | |
|---|---|---|---|---|
| Time | | | Venue: Auditorium | |
| 09:00 | 09:50 | 50 min | AMS981 | **Plenary Talk 10 :** Microgravity Research at ZARM's Drop Tower Facilities - Thorben Könemann |
| *09:50* | *10:05* | *15 min* | | *Morning Tea Break* |
| Time | | | Venue: Hall 3 | |
| **Session 4B: Material Sciences-2** | | | | |
| 10:05 | 10:30 | 25 min | AMS989 | **Keynote Talk :** In-Situ Observations of Crystal Growth from Solutions by High-Resolution Optical Interferometry - Katsuo Tsukamoto |
| 10:30 | 10:55 | 25 min | AMS073 | **Keynote Talk :** Surface Oscillation of Molten Oxide Droplet by Electrostatic Levitation Furnace (ELF) installed in ISS - Masahito Watanabe |
| 10:55 | 11:15 | 20 min | AMS864 | Microgravity crystal growth experiments on board the International Space Station and Recoverable Satellite - Nirmal Kumar Velu |
| 11:15 | 11:35 | 20 min | AMS231 | The effect of magnetic field on solidification process of metal under microgravity condition - Qiang Yu |
| 11:35 | 11:55 | 20 min | AMS542 | Effect of Magnetic Field on the Glass Forming Ability of ZBLAN glass - Yashdeep Yashdeep |
| 11:55 | 12:15 | 20 min | AMS311 | Chemical enrichment of asteroids - Low velocity impacts in microgravity using PRL's short range drop facility - Jaya Krishna Meka |
| 12:15 | 12:35 | 20 min | AMS990 | Investigation of Sulfur-Based Martian Concrete under Microgravity - Niketh |
| | | | | |
| *12:50* | *13:50* | *1 hr* | | *Lunch* |
| **Session 5B: Combustion-2** | | | | |
| 13:50 | 14:10 | 20 min | AMS138 | Effects of low pressure and oxygen on low stretch diffusion flame extinction of a cellulosic material - Tao Shangqing |
| 14:10 | 14:30 | 20 min | AMS346 | Smoke Characterization From Different Spacecraft Materials In Normal Gravity And Microgravity Environment - Aditya Sai Deepak Rachagiri |
| 14:30 | 14:50 | 20 min | AMS294 | Study on flame blowout and turbulent transition characteristics of non- premixed jet flames - Zhenhuan Lv |
| 14:50 | 15:10 | 20 min | AMS839 | Study on flame spread near flame-spread limit considering cool flame in microgravity - Shinsaku Harada |
| 15:10 | 15:30 | 20 min | AMS826 | Numerical study on combustion characteristics of Methyl Methacrylate (MMA) Pool Flames in Microgravity Environment - Shanmugasundaram Dakshnamurthy |
| 15:30 | 15:50 | 20 min | AMS857 | Experimental Study on Small-Scale Low-Intensity Turbulent Combustion under Normal Gravity - Zhiwei Yuan |
| 15:50 | 16:10 | 20 min | AMS738 | Numerical simulation for flow field around a flame spreading over an electric wire placed in a ground-based centrifuge - Nozomu Hashimoto |
| *16:10* | *16:30* | *12:30* | | *Evening Tea Break* |
| **Session 6B: Construction & Manufacturing in space-2** | | | | |
| 16:30 | 16:50 | 20 min | AMS374 | Study on the equivalent modeling of liquid sloshing in teardrop tanks under microgravity - Nan Miao |
| 16:50 | 17:10 | 20 min | AMS879 | Microbial Regolith Experiment: Passive Recoverable Payload for Microbial Experiments for Space based Applications - Adityan Rajesh |
| 17:10 | 17:30 | 20 min | AMS852 | New Space Industries for 'Untact' Society - Tae-Sung Yoon |
| 17:30 | 17:50 | 20 min | AMS993 | Mathematical Modelling of Bone Disuse under Space Microgravity - Digendranath Swain |
| 17:50 | 18:10 | 20 min | AMS508 | Test of AC feedback controller for Tianqin mission using a torsion pendulum - Jianbo Yu |
| *19:30* | *21:30* | *2 hr* | | *Banquet* |

| Wed 04 Dec | | | | |
|---|---|---|---|---|
| Time | | | Venue: Auditorium | |
| 09:00 | 09:50 | 50 min | AMS981 | **Plenary Talk 10 :** Microgravity Research at ZARM's Drop Tower Facilities - Thorben Könemann |
| *09:50* | *10:05* | *15 min* | | *Morning Tea Break* |
| Time | | | Venue: Hall 4 | |
| **Session 2C: Poster** | | | | |
| 10:05 | 18:05 | 8 hr | AMS465 | Microgravity-Induced Alterations in H9C2 Cells: A Comprehensive Study on Cellular Responses, miRNA Expression, and Amelioration by bioactive compound of Ficus religiosa |
| | | | AMS542 | Effect of Magnetic Field on the Glass Forming Ability of ZBLAN glass - Yashdeep Yashdeep |
| | | | AMS819 | Production of SiC from Lunar regolith simulant - Nithyasrimurugan S K |
| | | | AMS996 | Space Medicines: Are They Effective During Human Space Missions? - Nishtha Pathak |
| | | | AMS185 | Mechanotransduction and gene expression in microgravity: an integrated MechSigFlow pipeline for bio-fluid dynamics and T-cell signaling - Anirudh Murali |
| | | | AMS740 | µBioSat: A platform for microbial analysis in space - Shreyaans Jain |
| | | | AMS995 | Microgravity: Novel platform for antibiotic production from streptomycin species - Avani B. Patel |

| Thu 05 Dec | | | | |
|---|---|---|---|---|
| Time | | | Venue: IITRP | |
| **INDUSTRIAL VISIT** | | | | |
| 09:00 | 13:00 | 4 hr | | IITM Research Park & IITM Microgravity Drop Tower |
| *13:00* | *14:00* | *1 hr* | | *Lunch* |

| Fri 06 Dec | | | |
|---|---|---|---|
| Time | | | LOCAL TOUR |
| 09:00 | 17:00 | 8 hr | Mahapallipuram |