Proposal for Organized Session in ICIUS 2023

Title of the session	Mining Automation, Sensing and Advanced Solutions

Synopsis (~ 100 words)

Mining industry is transitioning towards broader applications of automation, sensor technologies and other advanced solutions allowing for increased productivity, improved economic performance, better vehicle and equipment utilisation and maintenance, improved working conditions and safety. For ISRU (in-situ resource utilisation) in space exploration new approaches and solutions must be developed for off-Earth mining. This session focuses on current developments in mining technologies and advanced solutions including but not limited to mining equipment automation, mine automation software, robotics in mining, remote control, monitoring, sensor technologies, signal transmission, data analysis, environmental management, off-Earth/space mining, nature-inspired engineering solutions for mining applications and case studies.

Session organizer

Name	Dr Nouné Melkoumian
Position	Senior Lecturer
Affiliation	University of Adelaide
Contact information	(E) noune.melkoumian@adelaide.edu.au

Biography (~ 100 words)

Dr Nouné Melkoumian is a mining engineering academic at the University of Adelaide. She holds PhD degrees in Mine Geotechnical Engineering and Geomechanics from the University of New South Wales, Australia and in Applied Mathematics and Fracture Mechanics from the Yerevan State University, Armenia. Her research focus is rock mechanics and geotechnical engineering, fracture mechanics, applied mathematics, sensing and monitoring, and application of biomimicry and nature inspired solutions to engineering design. She has developed a new active structural health monitoring system for application to large structures and in harsh environment.

Information on tentative contributors and papers

(Please include the representative author name, email address, and tentative title.)

It is expected that 5-10 papers will be submitted by academics/researchers and from the mining industry