

# AMICSA 2025



**Monday 16 June 2025 - Wednesday 18 June 2025**

**Universidade Nova de Lisboa**

## Scientific Programme

## **Needs and Requirements for Future Missions**

Overview of the specific demands and challenges posed by upcoming space applications.  
Focus on aligning microcircuit design goals with mission objectives.

## **Radiation-hardened technologies**

Advances in CMOS and non-CMOS solutions for radiation resilience  
Exploration of advanced node technologies, including UDSM and FinFET architectures

## **Methodologies for Radiation Hardening**

Techniques for radiation hardening at cell, circuit, and system levels  
Innovative approaches to improve reliability under extreme conditions

## **Custom Cell, Circuit, and System Design**

Design strategies for analogue, mixed-signal, and full custom digital circuits  
Development of cryogenic microcircuits for ultra-low-temperature operations

## **Intellectual Property and Re-usability**

Creation and integration of analogue and mixed-signal IP cores  
Development of reusable full custom digital IP cores and digital cell libraries

## **Radiation Effects**

In-depth exploration of radiation effect mechanisms  
Advanced modelling techniques to predict radiation impacts

## **Radiation Test Results**

Comparative analysis of simulation and measurement data  
Evaluation of test methodologies for validating radiation tolerance

## **Qualification**

Adherence to ESCC and ECSS standards for component and system qualification  
Key practices for ensuring compliance and reliability

## **Space Applications**

Presentation of practical use cases and mission-specific applications  
Exploration of the interplay between design and operational environments

## **In-Orbit Experiences and Flight Heritage**

Insights from real-world deployments of microcircuits  
Lessons learned and performance metrics from flight-proven systems

## **Other topics**

Relevant subjects and innovations in analogue, mixed-signal, and custom microcircuit design that fall outside the scope of the listed tracks.