MIRELAI is set to train the next generation of engineers for reliable and repairable microelectronics.

The European microelectronics industry faces numerous barriers in today's rapidly evolving technological landscape. One of the main challenges is to ensure the reliability and sustainability of the electronic components and systems to meet the proposed European Union's 'Right to Repair' rules. The current European Parliament resolution calls for products that are designed in a way that they last longer and that they can be repaired. Another challenge is identified in product verification and testing, which take up 70% of total development time[i]. This means that the success-critical time to market is not dominated by the actual technology development but by the product release process, representing a financial burden for the industry and reducing Europe's competitive advantage over key global players.

Given the strategic importance of the microelectronics industry for the European economy, which in 2021 has impacted roughly 20% of the European GDP and employed over 250.000 people[ii], Europe must form the next generation of cross-discipline experts in electronic manufacturing and digital innovations to be able to compete with other global players, such as China and North America, and thus strengthening European technological sovereignty in such a critical field.

MIRELAI's game-changing approach towards reliable and repairable electronics

In response to this issue, officially kicked off in October 2022, the doctoral network MIRELAI – MIcroelectronics RELiability driven by Artificial Intelligence – is an innovative EU-funded project with the ambition to address the challenges related to the production of microelectronics, and boost Europe's innovation capacity and competitiveness in the market.

"MIRELAI is a unique opportunity for young researchers to become cross-discipline experts leading the way to a sustainable microelectronics industry".

– Dr. Peter Fuchs (PCCL)

Bringing together a unique industry-academia partnership across 7 European countries, MIRELAI will combine expertise and capacity **to train the next generation of engineers for reliable microelectronics**, specifically electronic components and systems.

To achieve this goal, **the project is recruiting 13 doctoral candidates (DCs) to investigate the physics of degradation** and **reduce testing and verification efforts** in the microelectronic industry value chain. Additionally, **DCs will be offered scientific and industry skills training** to ensure that the knowledge produced with the project is brought into the market. The direct transfer of knowledge from academia to industry is a unique aspect of MIRELAI, which will contribute to speeding up Europe's innovation capacity and boost competitiveness in the global Electronic Components and Systems (ESC) market.

In conclusion, the MIRELAI project is set to help Europe's ECS industry to address current challenges related to reliability, repeatability, and product verification by training the next generation of engineers and ensuring a more efficient, greener, and production of microelectronics.

Co-funded by the European Union

Engineering and Physical Sciences Research Council

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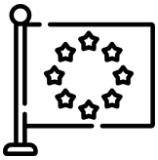
Key facts about MIRELAI

13
Beneficiaries

7
Associated Partners



7
European countries

3.2 M €

4
Years

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[ii] European Commission. (2022). ICT Sector Analysis 2022. EU Science Hub. Retrieved February 7, 2023, from https://joint-research-centre.ec.europa.eu/predict/ict-sector-analysis-2022_en

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