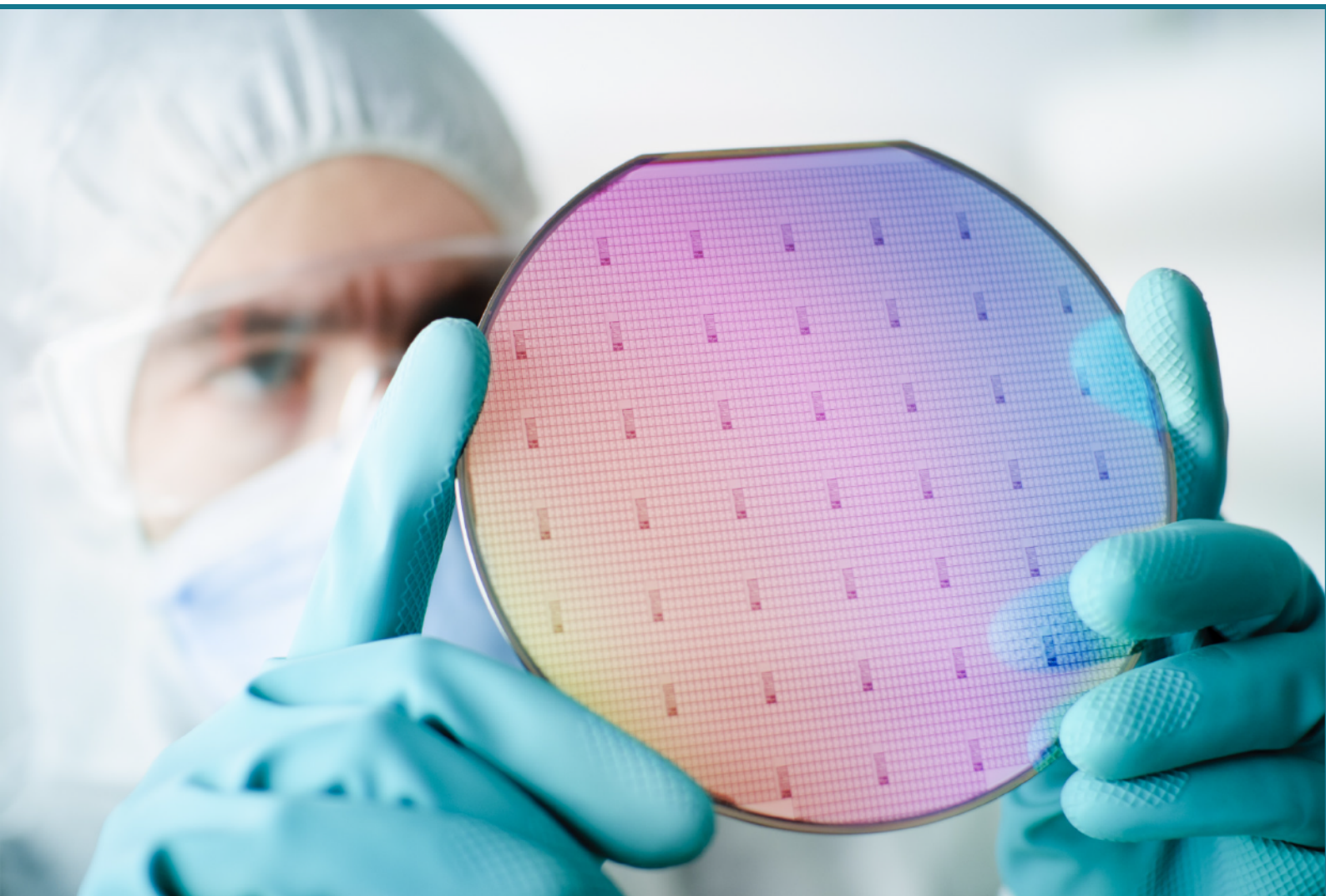


# LIFEbitMAPS

**"Pilot technology for aerobic Biodegradation of spent TMAH Photoresist solution in Semiconductor industries"**



***LIFE** aims to contribute to the implementation, updating and development of EU environmental and climate policy and legislation by co-financing projects with European added value, demonstrating Commission's ongoing commitment for circular economy.*

***LIFEbitMAPS** Project is carried out **HERE** under the EU LIFE "Environment & Resource Efficiency Programme"*

A large amount of wastewater containing tetramethyl ammonium hydroxide (TMAH) and Photoresist (PR) is generated every year in Europe by the **Electronics and Semiconductor (E&S) industries** that use it as a developer and etchant. Due to their toxic properties, the industrial streams containing TMAH and PR have to be treated in order to protect the water ecosystem, with high costs for the companies and impacts on the environment.

## AMBITIONS

- Contribute to reach the ultimate aim of the European Water Framework Directive (2000/60/EG) that is "to achieve the elimination of priority hazardous substances and achieving concentrations in the environment near background values for naturally occurring substances".
- Prove that the proposed process could replace the state-of-the-art technologies for the TMAH removal as they are less effective and consume great amounts of reagents.
- Help filling the gaps in the regulatory scenario by providing tangible results to local and EU policy makers to introduce shared regulations on TMAH emissions.
- Increase the awareness among the European E&S industry about the problem influencing industrial investments in safer and eco-innovative technologies.

## OBJECTIVES

- Design, construction and validation of a semi-industrial pilot plant enabling the treatment of spent PR/TMAH, and other mixed solutions generated by the E&S manufacturing processes.
- Demonstrate, at industrial scale, the biodegradation of TMAH to non-toxic biomass plus NH<sub>3</sub> by using some specific savage microorganisms selected during the previous R&D phase.
- Prove the cost sustainability of the process, in a LCC perspective, also taking into account the actual annual operating costs for the PR/TMAH concentrated disposal.
- Set up a more efficient water management approach proving that it is possible to reduce the net water consumption by saving water of the currently used ionic exchange process, and evaluate the total reuse of treated wastewater in the company's industrial plant.
- Promote the project through dedicated dissemination and networking means and activities.
- Pave the way for replication and transfer of the results to E&S Sector.

## THE PROJECT

**More information on: [www.lifebitmaps.eu](http://www.lifebitmaps.eu)**

## PARTNERS

**Start**  
**01/07/2016**

**Duration**  
**30 months**

**Funding**  
**€ 1,003,753.00**



This project has received funding from the European Union's Life Programme under grant agreement N. LIFE15 ENV/IT/000332



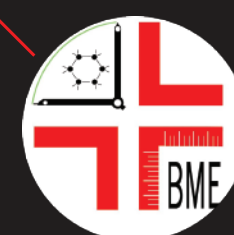
**Associated Beneficiary**  
**UNIVAQ**  
**L'Aquila, Italy**



**Coordinating Beneficiary**  
**Lfoundry S.r.l.**  
**Avezzano, Italy**



**Associated Beneficiary**  
**B.F.C. Sistemi S.r.l.**  
**Busnago, Italy**



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