

PROJECT DETAILS:

GRANT AGREEMENT NUMBER	101161153
PROJECT FULL TITLE	Novel approaches for halogen-free and sustainable etching of Silicon and Glass
TOPIC	HORIZON-EIC-2023-PATHFINDERCHALLENGES-01-04
START DATE OF THE PROJECT	1 September 2024
DURATION	48 Months
PROJECT COORDINATOR	Jörg Schuster TECHNISCHE UNIVERSITAET CHEMNITZ (TUC)
EU CONTRIBUTION	3 997 735.00 00 Euro
PROJECT WEBSITE	halofreeetch.eu

PARTNERS:

❖ TECHNISCHE UNIVERSITAET CHEMNITZ	Germany
❖ PLASMASOLVE SRO	Czechia
❖ VRIJE UNIVERSITEIT BRUSSEL	Belgium
❖ FRAUNHOFER	Germany
❖ UNIVERSITAET GRAZ	Austria
❖ WARRANT HUB – TINEXTA GROUP	Italy
❖ LIONIX INTERNATIONAL BV	Netherlands

European Commission Supports Innovative Halogen-Free Etching Project: HaloFreeEtch

October 2024, Chemnitz (Germany) | The “**Novel approaches for halogen-free and sustainable etching of Silicon and Glass**” (**HaloFreeEtch**) project is set to begin under the Horizon-EIC-2023-PathfinderChallenges-01 topic. This groundbreaking project, coordinated by **Technische Universität Chemnitz (TUC)**, will run for 48 months, starting on **1 September 2024**, with a total funding of **€3,997,735** provided by the European Union.

Project Overview

HaloFreeEtch aims to revolutionize the semiconductor manufacturing industry by developing new, sustainable, halogen-free etching processes for silicon and silicon oxide. Traditional industrial plasma etching processes rely on halogens, which pose significant environmental and health risks. By replacing these with more sustainable alternatives, the project seeks to reduce the carbon footprint and improve the overall sustainability of semiconductor manufacturing.

Objectives

The core objectives of HaloFreeEtch include:

- **Development of Novel Etching Processes:** Identifying and developing clean, efficient, and precise halogen-free etching processes.
- **Sustainability and Life Cycle Analysis:** Providing a novel model- and data-based methodology to quantify the carbon footprint of new etching processes.
- **Interdisciplinary Research:** Combining lab-scale research with computational screening and multi-scale modeling to predict potential working points for new etching methods.
- **Industrial Application:** Modifying state-of-the-art plasma etching machines and combining them with innovative features and advanced analytics to ensure applicability in industrial settings.

Significance

With the semiconductor industry at the heart of technological innovation, developing sustainable manufacturing processes is crucial for the environment and the industry's future. The HaloFreeEtch project aims to position Europe at the forefront of this green transition, contributing to the global effort to reduce environmental impact and promote sustainable practices.

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