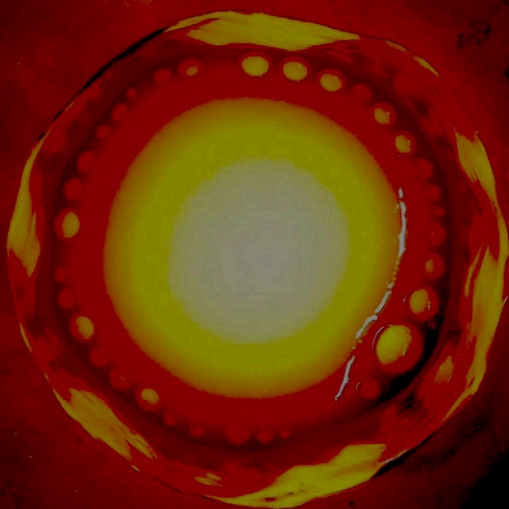


GLASS laboratory

Gateway
Laboratory of
Amorphous and
Structured
Solids and melts



WHO WE ARE

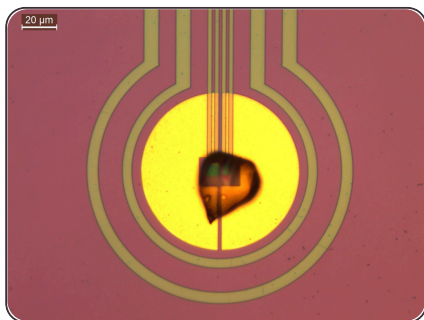
Established in 2023 with funding from the prestigious European Research Council (**ERC**, Consolidator Grant **NANOVOLC**).

The **GLASS Laboratory** at the National Research Council of Italy (CNR), Institute of Science, Technology and Sustainability for Ceramics (ISSMC) is a pioneering research center dedicated to advancing the fundamental and applied understanding of amorphous and structured solids and melts.

GLASS MISSION

We pursue a dual mission:

- **Basic research:** Unraveling the physicochemical processes behind volcanic activity to gain insights into eruptions, magma dynamics, and silicate melt behavior.
- **Applied research:** Translating discoveries into practical applications for industrial partners, developing next-generation materials optimized for manufacturing, sustainability, and extreme environments.



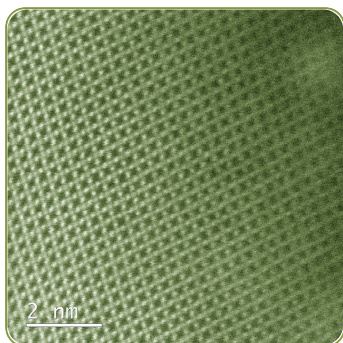
THE EQUIPMENT

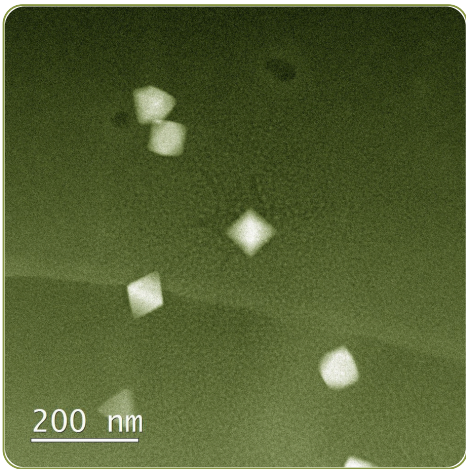
- Simultaneous Thermal Analysis (STA, TGA-DSC) with Evolved Gas Analysis by Mass Spectrometry (EGA-MS)
- Thermomechanical Analysers (TMA)
- Raman microscope
- Flash Scanning Differential Calorimeter (FDSC)
- Differential Scanning Calorimeter (DSC)
- High-temperature furnace for water extraction and quantification

WHY COLLABORATE WITH GLASS?

The GLASS Laboratory blends basic and applied research, benefiting both science and industry. By partnering with GLASS, companies gain:

- **Volcanic and industrial melt insights:** Our research informs both natural and industrial high-temperature processes.
- **High-performance materials:** We enhance material durability, strength, and thermal resistance for specialty glass and ceramic industries.
- **Sustainability:** We focus on reusing natural and industrial materials to reduce environmental impact.
- **Advanced analytics:** Our equipment provide high-quality data to refine manufacturing and product development.
- **Extreme condition expertise:** We develop materials that perform under challenging volcanic and industrial conditions.





Whether you are an academic institution aiming to deepen the understanding of volcanic processes or an industrial leader seeking innovation in material science, the **GLASS Laboratory** offers a unique platform for collaboration.

Our combined expertise in basic and applied research ensures that we deliver both scientific breakthroughs and tangible industrial solutions.

GLASS

Institute of Science, Technology
and Sustainability for Ceramics
(ISSMC)

National Research Council (CNR),
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**Consiglio Nazionale
delle Ricerche**



**CNR
ISSMC**

Istituto di Scienza, Tecnologia e Sostenibilità
per lo Sviluppo dei Materiali Ceramici