

IMPRS-SurMat

Ambitious young chemists, physicists, materials scientists and engineers can get the world-class training and research opportunities they need for career success at the International Max Planck Research School SurMat – Interface Controlled Materials for Energy Conversion (IMPRS-SurMat).

Our structured, three-year doctoral programme, conducted entirely in English, takes an intensive, interdisciplinary approach and brings together top scientists from across the globe. Doctoral candidates take courses and work with professors at several leading partner institutes in the vibrant, culturally rich and diverse Rhine-Ruhr metropolitan region of Germany.

Earn an internationally recognised doctorate in either natural sciences (Dr. rer. nat.) or in engineering (Dr.-Ing.) through this prestigious programme.

Research

IMPRS-SurMat, affiliated with the world-renowned Max Planck Society, offers state-of-the-art laboratory and computing facilities. With a **focus on interface controlled materials for energy conversion**, a central theme of the programme is the stability and durability of materials and their interplay with structural and functional properties. Both experimental and theoretical research approaches are welcome.



Key programme themes

- Microstructure and physics of defects
- Hydrogen uptake in materials
- Oxygen reduction and evolution reactions
- Materials for future energy systems
- Degradation mechanisms and life extension of materials



Academic partners

IMPRS-SurMat is a partnership between three renowned Max Planck Institutes and two respected universities:

- Max-Planck-Institut für Eisenforschung in Düsseldorf
- Max-Planck-Institut für Kohlenforschung in Mülheim an der Ruhr
- Max Planck Institute for Chemical Energy Conversion in Mülheim an der Ruhr
- Ruhr-Universität Bochum
- University of Duisburg-Essen

Through this partnership, doctoral candidates at IMPRS-SurMat have a **unique opportunity to engage with scientists across many different areas of expertise**, and to network with a vibrant and wide-ranging community, allowing you to become a specialist in your field while maintaining a broad perspective.

Programme curriculum

The core curriculum is delivered over years one and two. It is structured as a series of five two-day lectures that explore various aspects of modern materials and interface science, including:

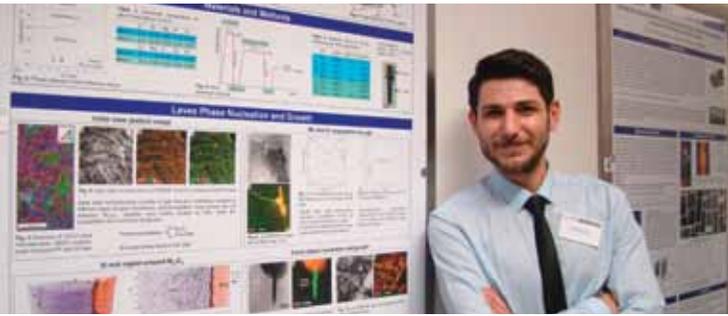
- Materials characterization
- Mechanical properties
- Interface chemistry
- Electrochemistry and corrosion
- Scale-bridging modelling and simulation

Regular seminars and workshops provide you with ample opportunity for active exchanges of research ideas and results with peers and professors. You are also supported and encouraged to present research projects at international conferences and meetings.

In addition to a rigorous scientific curriculum, IMPRS-SurMat offers training in important areas for career success, such as presentation skills, scientific writing and project management, as well as German language courses and career development.



Why IMPRS-SurMat?



Superior research environment: Max Planck Institutes are known worldwide and offer state-of-the-art research facilities.

Instructor commitment: You will meet regularly with your advisors and have many opportunities to interact with the scientific and the programme coordinator.

Interdisciplinary approach: Each project includes advisors from at least two academic departments.

Career benefits: Graduates of the programme go on to successful careers in research, teaching and management.

Global community: Over 80% of our participants are from outside of Germany.

Strong support: Our programme coordinator can help with all practical details as well as answering questions about daily life in Germany.

Funding: Financial support covering all living expenses is included.

Admission

Applications are accepted once or twice a year. High-achieving students with master's degrees in chemistry, physics, materials science, mechanical engineering or related subjects are invited to apply.

For details, visit: www.imprs-surmat.mpg.de



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International Max Planck Research School SurMat

Interface Controlled Materials for Energy Conversion

One PhD programme,
many options —
A Max Planck partnership
in Germany



Contact

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Natural Sciences &
Engineering