



Empa - the place where innovation starts

Empa is the research institute for materials science and technology of the ETH Domain and conducts cutting-edge research for the benefit of industry and the well-being of society.

The performance, durability and sustainability of engineering materials, as applied in e.g. medical technologies, microelectronics, energy harvesting and sensing devices, or large infrastructures, critically depend on the (electro)chemical reactivity and passivation (surface oxide formation) of the metal or alloy surface in its service environment.

With the support of the Metrohm Foundation, Empa has initiated a PhD program together with the ETH Zurich and EPFL (universities where the students will graduate). The Metrohm Foundation aims to support and promote scientific education in Switzerland, particularly in the fields of chemistry and electrochemistry. The general aim of the PhD program, coordinated by the laboratory of Joining Technologies and Corrosion at Empa, is to strengthen research in materials science related electrochemistry and allow a group of four PhD students to get trained and work closely together in various eminent fields of electrochemistry.

For one specific field of this program, we are looking for a highly motivated and enthusiastic

PhD Student (100%) in electrochemical coating of railway infrastructure

to join our interdisciplinary team and program. Would you like to contribute to cutting-edge research and innovation and work on collaborative projects with academia and industrial partners? Are you interested to explore and push the limits of what is technically possible together with highly motivated senior and junior academics, technicians, doctoral and master students?

We offer a position in the following topical field related to electrochemistry for sustainable materials technologies:

- **Electrochemical coating technologies for rails: a novel strategy for friction management and pre-emptive maintenance of rails (Empa - ETH Zurich)**

The candidate should have a Master's degree in Inorganic or Physical Chemistry, in Electrochemistry or Materials Science. Experimental experience in electrochemistry and analytical chemistry and electrochemical methods are considered as strong assets. A background in materials and surface-analytical characterization is also advantageous. Excellent communication skills, the ability to work in highly interdisciplinary research teams, as well as excellent English skills (oral and written), are prerequisites. Knowledge of German and French would be an advantage.

We offer a highly interdisciplinary and dynamic research environment with state-of-the-art laboratory equipment, an international network and contacts to academic and industrial partners. The position (100%) is available from 1st November 2021 (or upon agreement) for 4 years. A candidacy exam has to be passed at ETH Zurich no later than 1 year after the start of the contract.

For further information about the position please contact Dr. Patrik Schmutz patrik.schmutz@empa.ch or Dr Andrea Arcifa andrea.arcifa@empa.ch and visit our websites www.empa.ch/web/s208 and [Empa-Video](#)

We look forward to receiving your online application including a letter of motivation, CV, diplomas with transcripts and contact details of two referees. Please upload the requested

documents through our webpage. Applications via email will not be considered.

Empa, Cristina Marinoni, Human Resources, Ueberlandstrasse 129, 8600 Dübendorf,
Switzerland.

[Apply now](#)

