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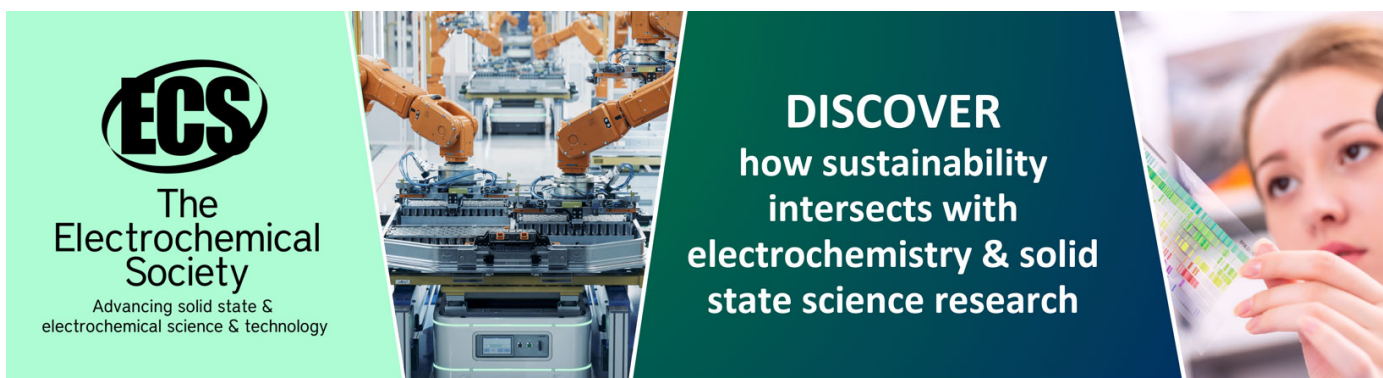
## E-MRS Fall Symposium I: Solutions for Critical Raw Materials Under Extreme Conditions

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## Preface

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The Symposium “Solutions for Critical Raw Materials Under Extreme Conditions” was held at Warsaw University of Technology, Warsaw, Poland, from September 19<sup>th</sup> to 21<sup>st</sup>, 2017 in the framework of the eminent E-MRS Fall Meeting. The meeting addressed the difficulties in the access to critical raw materials (CRMs) that are expected to depress industrial sectors vital especially for our society across Europe.

Global and local crises have clearly shown that life in a modern society ultimately depends upon readily available and affordable material supply. In this scenario, a clear goal is to reduce the dependence of industrial sectors on critical raw materials almost entirely imported from foreign countries, often with extremely volatile prices because of geopolitical reasons.

In particular, the Symposium was mainly focused to a well-defined sector concerning the materials meant to be used under extreme conditions of temperature, loading, corrosion, friction, and wear. In this framework, it was aimed to find solutions in related technological fields, such as manufacturing, machining, transportation, energy and construction. .

The Symposium provided a unique platform for a wide range of researchers from various international locations who are engaged in performing cutting-edge multidisciplinary research on strategic CRMs substitution, new material design, LCA, recycling, circular thinking, that is expanding and consolidating around a few initial catalytic nuclei of growth. The papers collected in the proceedings reflect this wide approach to the challenge.

This Symposium was organised jointly by two of the largest networks currently aiming to find sustainable solutions for materials in extreme conditions: the COST Action CRM-EXTREME ([http://www.cost.eu/COST\\_Actions/ca/CA15102](http://www.cost.eu/COST_Actions/ca/CA15102)) and the network of infrastructure EXTREME under the KIC EIT RawMaterials (<http://www.network-extreme.eu/>), bringing together a large number of leading researchers from within and outside Europe.



