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**TMS 2018**  
147<sup>th</sup> Annual Meeting & Exhibition



**MARCH 11 – 15, 2018**  
**PHOENIX, ARIZONA**

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## **ENERGY & ENVIRONMENT**

# **ADVANCED MAGNETIC MATERIALS FOR ENERGY AND POWER CONVERSION APPLICATIONS**

The accelerated expansion of global energy demands within the recent decade may be interpreted as an indicator of quality of life and the environment. Energy technologies hinge on efficient conversion and power densification. Engineering materials, some of which are subject to supply risks, price volatility, or concerns about long-term availability, has been shown to have significant impacts on viability, reliability, and efficiency of power conversion.

This symposium focuses on structure, property, processing, and performance interrelationships for emerging soft and hard magnetic materials systems as well as hybrid systems such as combined magnetocaloric and elastocaloric materials which are relevant for energy and power conversion applications. A special focus of this symposium will be the advanced manufacturing approaches and the interface of engineered materials with device-level performance and applications, which rely on the fundamental magnetic interactions between structure and electromagnetic energy. We encourage topics that focus on the economic effects that critical materials have on manufacturing and adaptation of technologies and applications. This symposium has a particular interest in emerging and established advanced manufacturing methods, such as additive manufacturing; top-down and bottom-up bulk nano-manufacturing; thermal-mechanical and thermal magnetic processing; and energy-dense processing such as RF, microwave, high pressure and high magnetic field processing.

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## **SYMPOSIUM SPONSORS**

TMS Functional Materials Division

TMS Magnetic Materials Committee; TMS Energy Conversion and Storage Committee

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