

## EUROMAT 2019 / Raw Materials

### SYMPOSIUM: 3

<b>Title: Critical Materials: Driving Advanced Technologies</b>		
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<b>Abstract</b>		
<p>Technological advancements have vastly improved the global quality of life while creating tremendous demand for material resources. In the last several decades, advanced technologies have enabled both energy and material efficiencies. Further advances are necessary, however, to balance the needs and demands of increasing populations with finite resources. Underpinning most advanced technologies are limited quantities of critical materials—those materials which perform an essential technological role and are susceptible to supply chain disruption, in part because they are difficult to replace with alternatives. Reducing materials criticality can be addressed with several approaches: expanding the supply of primary materials; reducing waste while improving materials recycling; and developing substitute materials and systems. Multi-disciplinary teams developing new approaches to address materials challenges are necessary to prevent supply shocks and ameliorate long-term supply chain challenges. This symposium covers the use, optimization, and substitution of critical materials in advanced technologies.</p> <p>Discussions on topics relevant to the efficient use of critical materials including rare earths, platinum group metals, and other minor metals are encouraged. Representative subjects include functional materials, such as advanced magnets, multiferroics, and phosphors; structural materials for vehicle light-weighting, performance improvements, and corrosion resistance; materials for batteries and energy storage; and advanced manufacturing to reduce materials intensity or to produce advantageous microstructures and structures not viable with more traditional approaches. Consideration of system level approaches to critical materials issues are also welcome.</p>		