

## MM 21: Invited talk Chen

Time: Wednesday 9:30–10:00

Location: H43

**Invited Talk**

MM 21.1 Wed 9:30 H43

**Rational design of Cu based shape memory alloys with low functional fatigue properties** — •XIAN CHEN and MOSTAFA KARAMI — Hong Kong University of Science and Technology, Hong Kong

Discoveries and optimization of novel properties of materials underlie the advanced technologies that greatly improve the quality of our modern life. Our engineering heuristics usually guide the discovery of new

materials, but the transitioning of the property from the initial discovery to the optimized one for practical use usually takes more than a decade. In fact, these engineering optimization problems should be under the umbrella of "Mathematics". In this talk, we will introduce a theory-based alloy development method for shape memory alloys. We exploit the synergy of the theories, the suite of algorithms and the advanced characterizations to develop Cu-based shape memory alloys with optimized functional fatigue properties.