

## **Deformation processes of refractory complex alloys with BCC/B2 microstructure**

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Refractory complex alloys designed with the so called "high-entropy" approach are promising candidates for future structural applications stressed under extreme conditions. Based on elements of the IV, V and VI columns of the periodic table, the formed alloys are mainly of body centered cubic structure which could be strengthened by B2 precipitates through Al additions. The inherent chemical complexity of those systems has a considerable influence on the elementary deformation processes as recently highlighted by atomic simulations on refractory materials. However, experimental studies are currently missing to report on operative mechanisms: several open questions are still unsolved and some basic challenges have still to be addressed. In that framework, the talk will give some insight into the plastic deformation processes in solid solutions of the Al-Hf-Nb-Ta-Ti-V-Zr system with or without presence of B2-type order. Detailed transmission electron microscopy analysis of the defects governing the plastic deformation will be reported and discussed.