



# Faculty Member

## Timken Foundation Center for Precision Manufacturing

### Contact Information



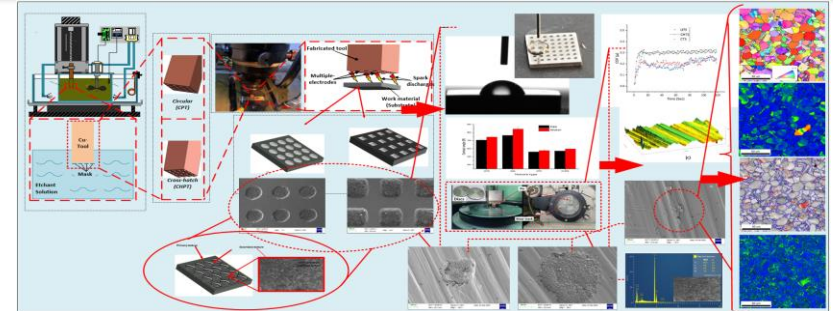
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### Research Interests

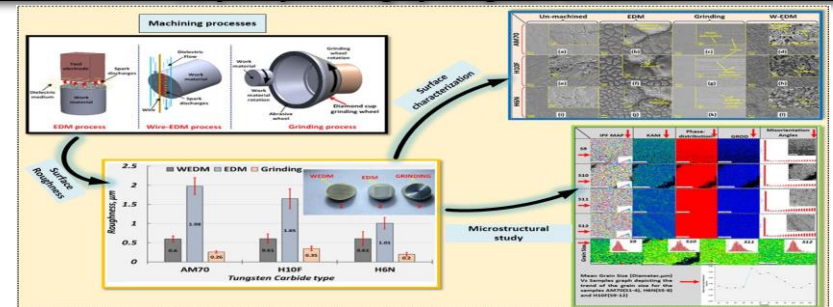
- Micro-machining processes
- Surface Engineering
- Finishing processes
- Sustainability in machining processes
- Process optimization
- Post-processing of additive manufactured parts
- Smart manufacturing with Industry 4.0

### Sample Research I: Surface Engineering and tribology



- Surface texture formation over Ti-6Al-4V and the analysis of the tribological performance of surfaces is a requirement for several biomedical and aerospace applications of the material.
- The newly developed cost-effective tool-mimic technique to produce textures proved to be successful in creating surface textures.
- Microstructural characterization provides information on the surface and sub-surface features of the Ti-6Al-4V material.

### Sample Research II: Surface finishing of tungsten carbide



- The finishing machining process of the cutting tool influences the cutting tool's life and the sustainability of the products that the cutting tool produces. The cutting tool's final machining processes are grinding, wire-electric Discharge Machining (EDM), sinker-EDM, etc. The effects of these processes on the sub-surface generation are critical for a sustainable cutting tool, along with their impact on production rates and abilities.