



Faculty Member

Timken Foundation Center for Precision Manufacturing

Contact Information



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Basic Research Efforts

- ♣ Influence of heat treatment and/or secondary processing on tensile response, cyclic fatigue response and fracture behavior (quasi --static and cyclic) of high strength steels.
- ♣ Influence of secondary processing (Nature of Manufacturing) on microstructural development, mechanical response, properties, deformation and fracture behavior of medium strength and high-strength aluminum alloys.
- ♣ Conjoint influence of nature of primary processing [manufacturing technique used] and secondary processing [heat treatment] on deformation characteristics and fracture behavior of lightweight magnesium alloys.
- ♣ Role of technique of Manufacturing Process used on microstructural development, mechanical properties and failure by fracture behavior of metal-based composite materials.

Research Interests

- ♣ Processing influences on microstructural development of metals, alloys and composite materials.
- ♣ Characterization of microstructural and intrinsic microstructural features.
- ♣ Inter-relationships between nature of primary processing [manufacturing technique] on microstructural development, mechanical response to include properties, and fracture behavior of materials and structures.
- ♣ Role of manufacturing technique used in governing the failure and/or fracture behavior of materials and structures.

Applied Research Efforts

- ♣ The role of manufacturing technique in engineering the development of nanostructured materials to include metals, alloys and composite materials.
- ♣ The feasibility and applicability of Additive Manufacturing [AM] to enhance and/or improve the mechanical response and failure (by fracture) characteristics of components and structures.
- ♣ Investigate and establish the extrinsic influence of additive manufacturing [AM] on intrinsic mechanical response of additively manufactured components and structures.