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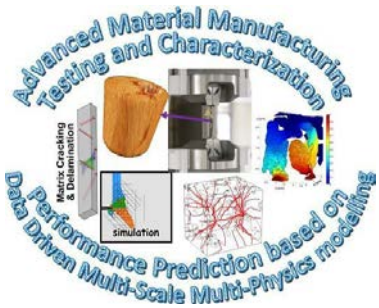
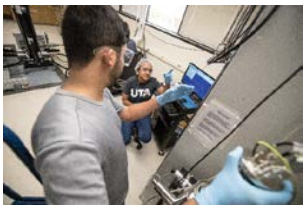
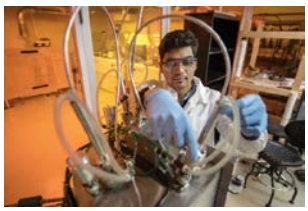
UNIVERSITY OF TEXAS AT ARLINGTON
RESEARCH INSTITUTE

Institute for Predictive Performance Methodologies




The Institute for Predictive Performance Methodologies (IPPM) is a unique resource focused on performance prediction for advanced composites and materials through development of special material analysis, characterization, and assessment methods that enable the prediction of future performance on the basis of current condition. IPPM specializes in heterogeneous materials including: polymer, metal, and ceramic based composites for structural, electrochemical, chemical processing, nuclear fuels and nuclear waste storage, and chemical processing applications.

VISION

To reduce the cost in the conception, development, and application of engineered materials and structures, and the risk of using them in society.

APPROACH

Predictive performance based on operational observables and knowledge-based models to reduce development and maintenance cost, time to market, and risk.

AREAS OF INTEREST AND COMPETENCY

- Applied science and engineering for the study and testing of life expectancy of heterogeneous and composite materials
- Application areas: Aerospace, Automotive, Defense, Biomedical, Energy

IPPM PRINCIPAL INVESTIGATORS:

- **Dr. Endel Iarve, IPPM Director, Professor of Mechanical and Aerospace Engineering:** discrete damage modeling methodologies, integrated computational materials science and engineering.
- **Dr. Kenneth Reifsnider, NAE, IPPM Founder, Presidential Distinguished Professor of Mechanical and Aerospace Engineering:** maintenance of advanced materials and composites with emphasis on zero maintenance and infinite life concepts.
- **Dr. Ye Cao, Assistant Professor of Materials Science and Engineering:** multiscale (DFT and phase-field) modeling and machine learning of microstructure evolution and charge transport in nanomaterials for electronic and energy applications
- **Dr. Rassel Raihan, Assistant Professor of Mechanical and Aerospace Engineering:** Multi-physical predictive performance of multi-scale degradation mechanisms, material state change, durability and data driven prognosis of heterogeneous material systems.
- **Dr. Xin Liu, Assistant Professor of Industrial Engineering:** data-driven multiscale modeling of composite materials and structures.

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DISCOVERY | DEVELOPMENT | INNOVATION | COMMERCIALIZATION

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