

Professor Rajiv Shivpuri

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- 34 Years of Experience
- 300 + Publications
- 100 + student theses/dissers.
- Fellow: ASM, ASME, SME and CIRP
- 2001 President of NAMRI/SME

Experience Summary

Dr. Shivpuri has been a faculty at OSU since 1986. At OSU, Dr. Shivpuri has won the 1997 Harrison Faculty Award for Excellence in Engineering Education and several Lumley Research Awards. Dr. Shivpuri has advised over 100 master theses and doctoral dissertations, and published over 300 research articles in refereed publications. Dr. Shivpuri is elected fellow of ASM International, ASME, CIRP (International Academy for Production Engineering) and SME. Dr. Shivpuri was the 2001 President of NAMRI (North American Manufacturing Research Institute). He is a Magnet Professor with the FIA (Forging Industry Education and Research Foundation), and is active in professional and trade associations such as AIST (Association of Iron and Steel Technology), ITA (International Titanium Association), NADCA (North American Die Casting Association).

Research Areas (selected examples)

■ Area 1: Development of Innovative Processes

- Reactive Plasma Nastructured Diamond Tribological Surface for Cast Iron Stamping Dies
- Novel Casting Process for Carbon Modified Hyper-Eutectic Al-Si alloy for forging Wear Resistant parts
- Advanced net shaped manufacturing of forged steel pistons
- Glass lubricated extrusion of titanium shapes.

■ Area 2: Integrated Process & Material Design

- Phase transformation based high speed machining of titanium alloys
- Eliminating defects in powder compaction and extrusion
- Material evolution models for hot deformation of superalloys

■ Area 3: Intelligent Process Design & Control

- MICROL: Model based online prediction and control of material and processing states in hot deformation
- SmartSmith: A real time inspection based prediction and control system for intelligent forging

■ Area 4: Process design for reduced failure risk

- A computational Bayesian decomposition framework for the product – process design under uncertainty
- Inclusion based design of material systems for reduced risk.
- Probabilistic process design for fracture critical parts
- Design and control of die casting process for reduced porosity, in automotive cylinder blocks

