CROSSCUTTING TECHNOLOGY

Sensors and Controls

Transformational Development for On line Monitoring and Process Control
Faster Response, Improved Knowledge, Better Control

Distributed Intelligence
- Computationally driven approaches for novel control architectures and logic, information generation, sensor networking & placement
- Manage complexity inherent to Advanced Systems
- Achieve Performance with Competing Objectives

Digital Darwinian world reveals architecture of evolution (Nature Physics)

- Low cost, high benefit technology
- Existing technology is inadequate
- Advanced power systems have harsh conditions that need to be monitored with   new instrumentation and sensor technology
- Boosts efficiency and significantly contributes to high reliability
- Supports all power generation systems and infrastructures
- Makes operation of future ultra clean energy plants possible
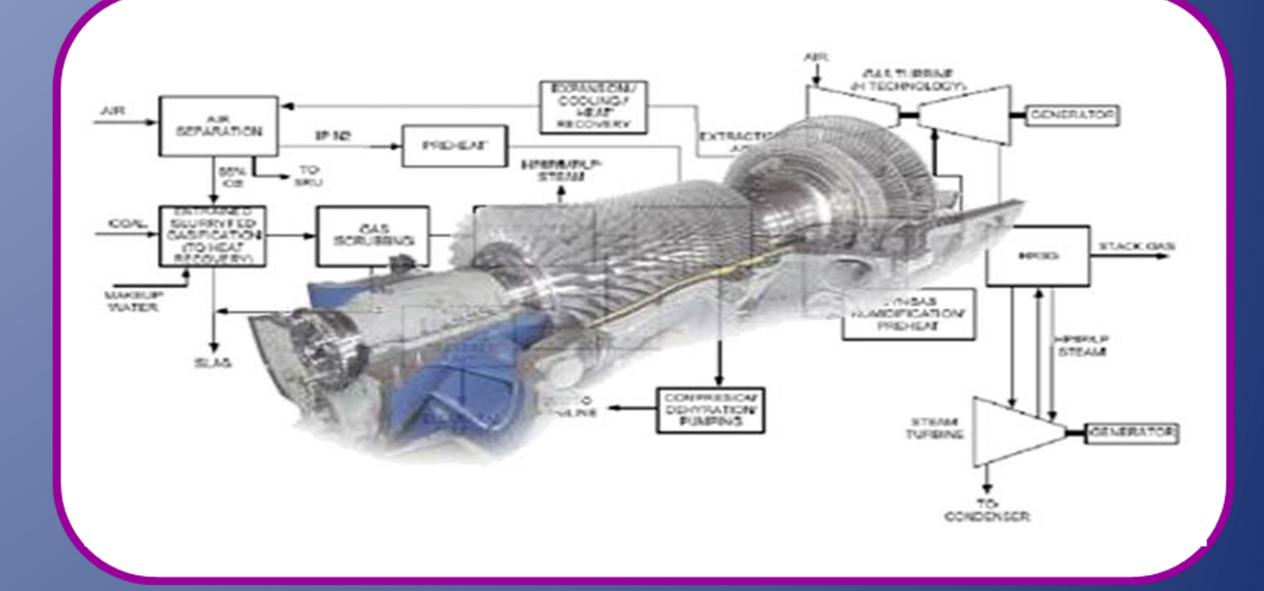- Enables new paradigms in plant and asset management beyond traditional process control
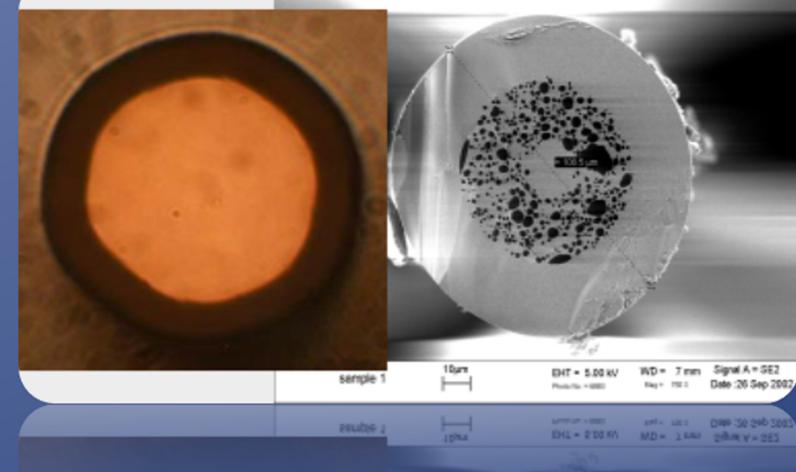
Advanced Manufacturing Sensors
- Pressure, Strain, Temperature, Impedance Defect
- Basis for integrating sensors into systems, and
- Integration of sensors into design and fabrication of components
- AM techniques to lower cost and improve fabrication

Advanced Sensing and Remote Monitoring
- Harsh environment sensing concepts and approaches for low cost dense distribution of sensors
- Exploration of Sensor Networking using Passive and Active Wireless communication, Thermoelectric and vibration energy harvesting approaches