

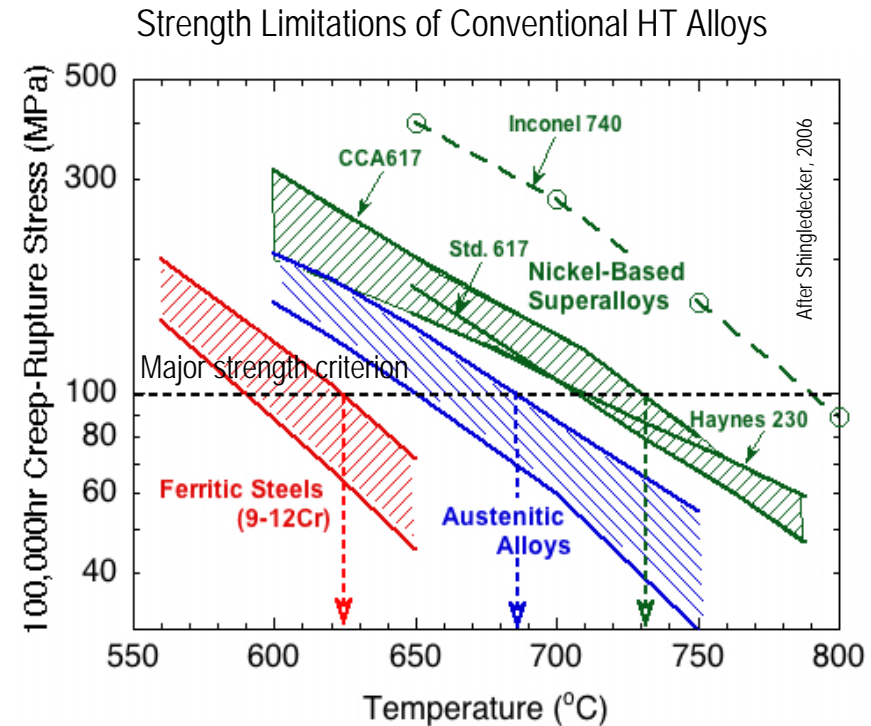
# 22nd Annual Conference on Fossil Energy Materials

Session 1 - Advanced Alloys & Concepts

Omni William Penn Hotel  
Pittsburgh, PA  
July 8, 2008

# Overall Materials Barriers and Opportunities

- A priority for power generation is to increase the efficiency of coal utilization
- Efficiency increases are synonymous with the need for advanced materials
- There are perceived and/or real materials barriers preventing efficiency improvements:
  - Current alloy classes have reached the limits of high-temperature capabilities
    - strength; environmental resistance; long-term durability
  - Extended time period needed to deploy new materials
    - pressure-boundary materials traditionally  $\approx 15$  years (ASME)



# Session 1 - Advanced Alloys & Concepts

1. Development of alumina-forming austenitic stainless steels: *Yukinori Yamamoto*
2. Nano-precipitates via internal oxidation: *Joachim Schneibel*
3. RT ductility enhancement of Mo alloys with nano-sized metal oxide dispersions: *Bruce Kang*
4. Update on the status of ODS alloys for fossil energy applications: *Ian Wright*
5. Control of defects and microstructure in ODS alloys: *Andy Jones*
6. Oxide dispersion-strengthened alloys for fossil energy applications: *Bimal Kad*
7. Development of fireside corrosion models for advanced combustion systems: *Steve Kung*