

Terry A. Cruse

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Professional Experience

- **2001-Present.** Metallurgical Engineer, Chemical Science and Engineering Division, Argonne National Laboratory.
- **2000-2001.** Postdoctoral Fellow, Chemical Engineering Division, Argonne National Laboratory.
- **1998-2001.** Postdoctoral Fellow, Energy Technology Division, Argonne National Laboratory.
- **1999-2003.** Adjunct Faculty, Mechanics, Materials and Aerospace Department, Illinois Institute of Technology.
- **1991-1992.** Production and quality control engineer for manufacturing of incandescent lamps. Managed and trained quality assurance teams. Philips Lighting.

Education

- Ph.D., Metallurgical Engineering, University of Missouri-Rolla, 1998.
- M.S., Materials Science and Engineering, University of Florida, 1994.
- B.S., Ceramic Engineering, University of Missouri-Rolla, 1991.

Awards

- General Motors Powder Metallurgy Fellowship
- University of Florida Materials Science and Engineering Fellowship
- AΣM, Metallurgy Honor Society
- Keramos, Ceramic Honor Society

Career Activities & Highlights

- Argonne National Laboratory
 - Developed a novel seal design with demonstrated high temperature elastic behavior.

- Provided a comprehensive understanding of degradation mechanisms in solid oxide fuel cells in the presences of chromium.
- Characterized anode and cathode materials for solid oxide fuel cells and improved behavior.
- Developed powder metallurgy production techniques and novel alloys with improved corrosion resistance and enhanced electrically conductive scale formation.
- Studied thermo-elastic properties of fibrous monolithic materials.
- Worked on fabrication, development and characterization of novel ceramics and composites.
- Co-inventor of:
 - Novel seal designs for solid oxide fuel cells and applicable to other high temperature sealing applications.
 - New cathode materials for solid oxide fuel cells with improved performance and stability.
 - Novel solid oxide fuel cell design with improved properties and easy fabrication.
 - Method for tape casting of metals for solid oxide fuel cell interconnect applications and production of functionally graded metallic composites.
 - Innovative ceramic composites with non-brittle failure behavior.
- Philips Lighting
 - Developed and implemented quality assurance program for production facility and trained quality assurance teams.
- Professional Organizations
 - American Ceramic Society
 - ASM/TMS
 - Powder Metallurgy Institute

Publications & Patents

- 1 book chapter
- 8 journal papers
- 21 refereed proceeding papers
- 9 Patents & Patent Applications