

Terry A. Cruse

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Professional Experience

- **2001-Present.** Metallurgical Engineer, Chemical Sciences 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

- PhD, Metallurgical Engineering, University of Missouri-Rolla, 1998
- MS, Materials Science and Engineering, University of Florida, 1994
- BS, 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 Society Affiliations

- Member, American Ceramic Society
- Member, ASM International
- Member, The Minerals, Metals & Materials Society
- Member, Powder Metallurgy Institute

Publications & Patents

- 1 book chapter
- 8 journal papers
- 21 refereed proceeding papers
- 9 patents and patent applications