

J. David Carter

Materials Scientist
Argonne National Laboratory
9700 South Cass Avenue, Bldg. 205
Argonne, IL 60439
phone: 630/252-4544
fax: 630/972-4544
e-mail: carter@cmt.anl.gov

Professional Experience

- Electrochemical Ceramics group leader
- Developed low temperature SO₃ reduction process for enabling sulfur-iodine thermochemical cycle.
- Developed new electrodes and identified degradation mechanisms in stacks for high temperature steam electrolysis.
- Principle investigator for the *in situ* study of lanthanum manganite air electrodes using X-ray absorption techniques at the Advanced Photon Source.
- Invented and developed the TuffCell, a self-sealed metal-supported solid oxide fuel cell..
- Developed reforming and water gas shift catalysts for hydrogen generation from hydrocarbons.
- Developed microchannel monolith for autothermal reforming catalysts.
- Tested samples & collaborated with vendor to commercialize autothermal reforming catalyst.
- Technical advisor of IPP Phase II project involving the development of electrochemical oxygen pumps. Worked with Praxair as industry partner. Project directly employed 100 Russian scientists and staff .
- Co-developed anode supported ceria-based SOFC, 350 mA/cm² at 450 mV and 500°C (1998).

Publications

- More than 60 technical publications and presentations
- Ten patents

Awards

- Excellence in Technology Transfer Federal Laboratory Consortium for Technology Transfer May 2002.
- R&D 100 Award 2001 for the development of catalysts for the autothermal reforming of hydrocarbon fuels to hydrogen.

- 2000 National Laboratory Fuel Cell R&D Award

Education

- Ph.D. and M.S., Ceramic Engineering, University of Missouri, Rolla
- B.S., Material Science and Engineering, University of Utah