

# Improved Ceramics And Ceramic Composites

Tech ID: 10295 / UC Case 2005-510-0

## DESCRIPTION

The University of California has a number of inventions in the field of ceramics and ceramics composites that are available for commercial licensing. These technologies include:

- ▶ *Porosity*—A combustion synthesis method that produces low-porosity, high-density ceramics ([1995-263](#)), a synthesis method that produces high-density ceramics with extremely fine crystallite sizes ([2005-510](#)), a one-step synthesis and consolidation of nanoparticles in ceramics, etc. ([1999-355](#)), and methods for producing high-porosity oxide ceramics ([1997-186](#));
- ▶ *Ductility*—A method for making high-strength nanocrystalline materials with improved ductility ([2003-539](#)), an inexpensive, easy-to-fabricate ceramics matrix composite ([1995-109](#)), an improved method for making metal matrix composites using spray atomization ([1994-134](#)), a practical method for microalloying magnesium in molybdenum silicide ([2002-237](#)), and strong, flaw-tolerant ceramics laminate composites ([1991-243](#) and [1999-385](#));
- ▶ *Hardness*—A thermal barrier coating with increased hardness and wear resistance ([2002-164](#)), a direct, one-step synthesis of titanium carbonitride cermets ([1992-018](#)), bulk metallic glasses with nanoscale crystallites ([2003-334](#)), and diamond-containing ceramic composites ([1986-070](#));
- ▶ *Functionally-Gradient Materials (FGMs)*—A method for making layered FGMs with superior interlayer bonding ([2005-223](#)) and a simple, inexpensive one-step synthesis of metalloceramic FGMs that display a smooth transition in their compositional profiles ([1992-027](#)); and
- ▶ *General Synthesis & Fabrication Methods*—A system for post-machining inspection of manufactured ceramic parts ([Ceramic Candling Inspection System](#)), a method for preparing nanocrystalline coatings ([1996-370](#)), an improved method of combustion synthesis ([1992-020](#)), and a method for fabricating complex-shaped ceramics with a more uniform phase distribution ([1990-317](#)).

**SLIDESHOW PRESENTATION:** More information about this invention portfolio is available in a slideshow presentation that can be downloaded from <http://patron.ucop.edu/ncd/docs/ceramics.pps> (4.1 MB). This file includes an audio narration and web links to non-confidential descriptions, issued patents, related publications, and inventor profiles.

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## INVENTORS

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## OTHER INFORMATION

### CATEGORIZED AS

- ▶ **Energy**
  - ▶ Other
  - ▶ Storage/Battery
- ▶ **Optics and Photonics**
  - ▶ All Optics and Photonics

### RELATED CASES

2005-510-0



PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,609,565	12/17/2013	2005-510
United States Of America	Issued Patent	7,601,403	10/13/2009	2005-510

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

► [Fuel Cells Using Low-Temperature Conducting Materials](#)

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