Improved Ceramics And Ceramic Composites

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

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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.



PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,609,565	12/17/2013	2005-510

INVENTORS

- Anselmi-Tamburini, Umberto
- Garay, Javier E.
- Kim, Sangtae
- Martin, Manfred
- Munir, Zuhair A.

OTHER INFORMATION

CATEGORIZED AS

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

RELATED CASES

2005-510-0

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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