

**Issued Patents:**

US 7,960,442 (06/14/2011)

**Nanoporous media template from unsymmetrical amphiphilic porogens.**

Cha, Jennifer; Dubois, Geraud; Hedrick, James Lupton; Kim, Ho-Cheol; Lee, Victor; Miller, Robert Dennis; Volksen, Willi.

US 7,931,829 (04/26/2011)

**Low-k interlevel dielectric materials and method of forming low-k interlevel dielectric layers and structures.**

Dubois, Geraud; Hedrick, James Lupton; Kim, Ho-Cheol; Lee, Victor; Magbitang, Teddie; Miller, Robert Dennis; Sankarapandian, Muthumanickam; Sundberg, Linda; Volksen, Willi.

US 7,927,664 (04/19/2011)

**Method of step-and-flash imprint lithography.**

DiPietro, Richard Anthony; Dubois, Geraud; Miller, Robert Dennis; Sooriyakumaran, Ratnam.

US 7,919,225 (04/05/2011)

**Photopatternable dielectric materials for BEOL applications.**

Allen, Robert David; Brock, Phillip; Davis, Blake; Dubois, Geraud; Qinghuang, Lin; Miller, Robert Dennis; Purushothaman, Sampath; Sooriyakumaran, Ratnam.

US 7,892,635 (02/22/2011)

**Precursors for porous low-k dielectric constant materials for use in electronic devices.**

Hawker, Craig Jon; Hedrick, James Lupton; Miller, Robert Dennis; Volksen, Willi.

US 7,820,242 (10/26/2010)

**Low-k interlevel dielectric materials and method of forming low-k interlevel dielectric layers and structures.**

Dubois, Geraud; Hedrick, James Lupton; Kim, Ho-Cheol; Lee, Victor; Magbitang, Teddie; Miller, Robert Dennis; Sankarapandian, Muthumanickam; Sundberg, Linda; Volksen, Willi.

US 7,482,389 (01/27/2009)

**Nanoporous media with lamellar structures.**

Cha, Jennifer; Dubois, Geraud; Hedrick, James Lupton; Kim, Ho-Cheol; Lee, Victor; Magbitang, Teddie; Miller, Robert Dennis; Volksen, Willi.

US 7,468,330 (12/23/2008)

**Imprint process using polyhedral oligomeric silsesquioxane based imprint materials.**

Allen, Robert David; DiPietro, Richard Anthony; Dubois, Geraud; Hart, Mark Whitney

US 7,459,183 (12/02/2008)

**Method of forming low-k interlevel dielectric layers and structures.**

Dubois, Geraud; Hedrick, James Lupton; Kim, Ho-Cheol; Lee, Victor; Magbitang, Teddie; Miller, Robert Dennis; Sankarapandian, Muthumanickam; Sundberg, Linda; W. Volksen, Willi.

US 7,368,483 (05/06/2008)

**Porous composition of matter, and method of making same.**

Connor, Eric; Godschalx, James P.; Hawker, Craig Jon; Hedrick, James Lupton; Lee, Victor; Magbitang, Teddie; Miller, Robert Dennis; Volksen, Willi.

US 7,341,788 (03/11/2008)

**Materials having predefined morphologies and methods of formation thereof.**

Cha, Jennifer, Hedrick, James Lupton; Kim, Ho-Cheol; Miller, Robert Dennis; Volksen, Willi.

US 7,309,754 (12/18/2007)

**Stable encapsulant fluid capable of undergoing reversible Diels-Alder polymerization.**

Brock, Phillip; M.W. Chaw, Dawson, Daniel; Hawker, Craig Jon; Hedrick, James Lupton; Magbitang, Teddie; McKean, Dennis; Miller, Robert Dennis; Palmisano, Richard; Volksen, Willi.

US 7,229,934 (06/12/2007)

**Porous organosilicates with improved mechanical properties.**

Dubois, Geraud Jean-Michel; Hedrick, James Lupton; Kim, Ho-Cheol; Lee, Victor Yee-Way; Magbitang, Teddie Peregrino; Miller, Robert Dennis; Simonyi, Eva E.; Volksen, Willi.

US 7,087,982 (08/08/2006)

**Nitrogen-containing polymers as porogens in the preparation of highly porous, low dielectric constant materials.**

Huang; Elbert Emin, Magbitang; Teddie, Miller, Robert Dennis; Volksen; Willi.

US 7,056,840 (06/06/2006)

**Direct photo-patterning of nanoporous organosilicates, and method of use.**

Miller, Robert Dennis; Kim, Ho-Cheol; Connor, Eric; Lee, Victor Yee-Way; Wallraff, Gregory Michael; Volksen, Willi.

US 6,992,115 (01/31/2006)

**Preparation of crosslinked particles from polymers having activatable crosslinking groups.**

Hawker, Craig Jon; Hedrick, James Lupton; Miller, Robert Dennis; Victor Yee-Way.

US 6,890,703 (05/10/2005)

**Preparation of crosslinked particles from polymers having activatable crosslinking groups.**

Hawker, Craig Jon; Hedrick, James Lupton; Miller, Robert Dennis; Victor Yee-Way.

US 6,812,551 (12/02/2004)

**Defect-free dielectric coatings and preparation thereof using polymeric nitrogenous porogens.**

Hawker, Craig Jon; Hedrick, James Lupton; Huang, Elbert Emin; Lee, Victor Yee-Way; Magbitang, Teddie; Mecerreyes, David; Miller, Robert Dennis; Volksen, Willi.

US 6,685,983 (02/03/2004)

**Defect-free dielectric coatings and preparation thereof using polymeric nitrogenous porogens.**

Hawker, Craig Jon; Hedrick, James Lupton; Huang, Elbert Emin; Lee, Victor Yee-Way; Magbitang, Teddie; Mecerreyes, David; Miller, Robert Dennis; Volksen, Willi.

US 6,670,285 (12/30/2003)

**Nitrogen-containing polymers as porogens in the preparation of highly porous, low dielectric constant materials.**

Hawker, Craig Jon; Hedrick, James Lupton; Huang, Elbert Emin; Lee, Victor Yee-Way; Magbitang, Teddie; Miller, Robert Dennis; Volksen, Willi.

US 6,541,865 (04/01/2003)

**Porous dielectric material and electronic devices fabricated therewith.**

Hawker, Craig Jon; Hedrick, James L.; Miller, Robert D.; Volksen, Willi.

US 6,399,666 (06/04/2002)

**Insulative matrix material.**

Hawker, Craig Jon; Hedrick, James Lupton; Heise, Andreas; Mecerreyes, David; Miller, Robert Dennis; Trolls.ang.s, Olof Mikael.

US 6,342,454 (01/29/2002)

**Electronic devices with dielectric compositions and method for their manufacture.**

Hawker, Craig Jon; Hedrick, James L.; Miller, Robert D.; Volksen, Willi.

US 6,333,141 (12/25/2001)

**Process for manufacture of integrated circuit device using inorganic/organic matrix comprising polymers of three dimensional architecture .**

Carter, Kenneth Raymond Dipietro, Richard Anthony; Hawker, Craig Jon; Hedrick, James Lupton; Lee, Victor YeeWay; Miller, Robert Dennis; Volksen, Willi; Yoon, Do Yeung.

US 6265753 (07/24/2001)

**Interconnect dielectric compositions, preparation thereof, and integrated circuit devices and packages fabricated with.**

Carter, Kenneth R.; Hedrick, James Lupton; Lee, Victor Yee-Way; McHerron, Dale C.; Miller, Robert Dennis.

US 6,177,360 (01/23/2001)

**Process for manufacture of integrated circuit device.**

Carter, Kenneth Raymond; Cook, Robert Frances; Harbison, Martha Alyne; Hawker, Craig Jon; Hedrick, James Lupton; Lee, Victor Yee-Way; Liniger, Eric Gerhard; Miller, Robert Dennis; Volksen, Willi; Yoon, Do Yeung.

US 6,143,643 (11/07/2000)

**Process for manufacture of integrated circuit device using organosilicate insulative matrices .**

Carter, Kenneth Raymond; Hawker, Craig Jon; Hedrick, James Lupton; Lee, Victor YeeWay; Miller, Robert Dennis; Volksen, Willi; Yoon, Do Yeung.

US 6,110,649 (08/29/2000)

**Process for manufacture of integrated circuit device.**

Carter, Kenneth Raymond; Hawker, Craig Jon; Hedrick, James Lupton; Miller, Robert Dennis; Pogge, Bernhard.

US 6,107,357 (08/22/2000)

**Dielectric compositions and method for their manufacture.**

Hawker, Craig Jon; Hedrick, James L.; Miller, Robert D.; Volksen, Willi.

US 6,093,636 (07/25/2000)

**Process for manufacture of integrated circuit device using a matrix comprising porous high temperature thermosets .**

Carter, Kenneth Raymond; Dawson, Daniel Joseph; Hawker, Craig Jon; Hedrick, James Lupton; Hedrick, Jeffrey Curtis; Lee, Victor YeeWay; Miller, Robert Dennis; Volksen, Willi; Yoon, Do Yeung.

US 5,962,113 (10/05/1999)

**Integrated circuit device and process for its manufacture.**

Brown, Hugh Ralph; Carter, Kenneth Raymond; Cha, Hyuk-Jin; Dipietro, Richard Anthony; Hedrick, James Lupton; Hummel, John Patrick; Miller, Robert Dennis; Yoon, Do Yeung.

US 5,953,627 (09/14/1999)

**Process for manufacture of integrated circuit device.**

Carter, Kenneth Raymond; Cook, Robert Francis; Harbison, Martha Alyne; Hawker, Craig Jon; Hedrick, James Lupton; Kim, Sung-Mog; Liniger, Eric Gerhard; Miller, Robert Dennis; Volksen, Willi; Yoon, Do Yeung.

US 5,895,263 (04/20/1999)

**Process for manufacture of integrated circuit device.**

Carter, Kenneth Raymond; Dawson, Daniel Joseph; DiPietro, Richard Anthony; Hawker, Craig Jon; Hedrick, James Lupton; Miller, Robert Dennis; Yoon, Do Yeung.

US 5,883,219 (03/16/1999)

**Integrated circuit device and process for its manufacture.**

Carter, Kenneth Raymond; Dawson, Daniel Joseph; DiPietro, Richard Anthony; Hawker, Craig Jon; Hedrick, James Lupton; Miller, Robert Dennis; Yoon, Do Yeung.

US 5,804,607 (09/08/1998).

**Preparation of foamed elastomeric polymer used as dielectrics in electronic components.**

Hedrick, Jeffrey curtis; Hedrick, James Lupton; Hilborn, Jons Gunnar; Lio, Yun-Tsin; Miller, Robert Dennis; Shih, Da-Yuan.

US 5,773,197 (06/30/1998)

**Integrated circuit device and process for its manufacture.**

Carter, Kenneth Raymond; Hedrick, James Lupton; Miller, Robert Dennis.

US 5,767,014 (06/16/1998)

**Integrated circuit and process for its manufacture.**

Hawker, Craig Jon; Hedrick, James Lupton; Miller; Robert Dennis.