"Smart Dust," or Porous Silicon Photonic Crystals

Tech ID: 19578 / UC Case 2004-032-0

TECHNOLOGY DESCRIPTION

UC San Diego researchers have developed a new nanotechnology, smart dust, that has state-of-the-art applications in almost every field of use, including biological sensing, screening, and communications technology.

The invention utilizes micron-sized particles of silicon that have been etched and then chemically modified in such a way that each individual particle has its own addressable identity. This feature allows one to use thousands of the particles together, each with its own "tag," for high-sensitivity chemical or biological sensing, diagnostics, and low- and high-throughput screening of biomolecular compounds.

APPLICATIONS

In addition to those mentioned above, the researchers are currently exploring other biological applications, such as controlled drug release, biomedical implants, artificial organs, and cell-based experimentation platforms.

INTELLECTUAL PROPERTY INFO

This technology is available for licensing, sponsored research, or both. Further information can be obtained under a confidentiality agreement.

RELATED MATERIALS

- View inventor's Smart Dust presentation from 2005.
- For more information about smart dust and a to view a list of publications, visit http://chem-faculty.ucsd.edu/sailor/research.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,308,066	11/13/2012	2004-032

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OTHER INFORMATION

CATEGORIZED AS

- **Biotechnology**
  - Genomics
- **Medical**
  - Research Tools
- **Nanotechnology**
  - NanoBio
- **Research Tools**
  - Screening Assays
- **Security and Defense**
  - Other
- **Sensors & Instrumentation**
  - Other

RELATED CASES

2004-032-0, 1997-064-4, 2002-075-2, 2003-257-2, 2003-182-2, 2003-214-2