

Complex Optical Encoding of Porous Silicon Photonic Crystals

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TECHNOLOGY DESCRIPTION

Researchers at UC San Diego have invented a method of optically encoding porous silicon photonic crystals for use in high throughput screening and bioassays. The method allows for large libraries of unique particle types to be manufactured.

The process is distinct from existing methods of encoding, such as fluorescent molecules, core-shell quantum dots, and photonic crystals formed using Rugate or Bragg reflectivity approaches, in that it does not strive to create spectral lines that act as bits-and are limited by the number of codes that can be generated. In contrast, this invention for data extraction and analysis utilizes all the complexity of the spectrum which results from the reflectivity properties of the photonic crystals. Unlike bioassay systems that couple fluorescent encoding methods with fluorescent assay, the method does not suffer from spectral overlap of the encoding method with the assay readout.

These photonic crystals may be used as integral parts of randomly assembled microarrays. These microarrays could be applied in the field of gene expression, genotyping, proteomics, as well as real time chemical and biological sensing.

RELATED MATERIALS

- View inventor's [Smart Dust](#) presentation from 2005.
- Visit inventor's lab link at <http://chem-faculty.ucsd.edu/sailor/research>.

INTELLECTUAL PROPERTY INFO

This technology is presently available for licensing. Patents pending.

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OTHER INFORMATION

CATEGORIZED AS

- **Biotechnology**
 - Genomics
 - Proteomics
- **Nanotechnology**
 - NanoBio
- **Research Tools**
 - Nucleic Acids/DNA/RNA
 - Screening Assays
- **Security and Defense**
 - Other
- **Sensors & Instrumentation**
 - Biosensors

RELATED CASES

2003-214-0