

Determination of Protein Size

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TECHNOLOGY DESCRIPTION

This invention teaches the preparation and use of porous Si films containing a controlled distribution of pore sizes for a unique bio-sensing application. Use of this invention to achieve the simultaneous separation and detection of a protein in a nano-machined silicon matrix is described. Gating of the response by adjustment of pH below and above the isoelectric point of the protein has also been demonstrated, and provides an additional means of bio-molecule separation and identification.

This invention is useful for the determination of protein size and for the detection of weakly-bound complexes. In addition, the invention can controllably trap and release proteins from a microporous matrix and is useful for drug delivery applications, as porous Si has been shown to be bio-compatible and readily bio-resorbable.

RELATED MATERIALS

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

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,555,114	01/31/2017	2003-182

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OTHER INFORMATION

CATEGORIZED AS

- ▶ **Biotechnology**
 - ▶ Genomics
 - ▶ Proteomics
- ▶ **Nanotechnology**
 - ▶ NanoBio
- ▶ **Research Tools**
 - ▶ Nucleic Acids/DNA/RNA
- ▶ **Security and Defense**
 - ▶ Other

RELATED CASES

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