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## Submicron surface plasmon biosensors for glucose concentration assessment

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The construction of a miniature surface plasmon sensor utilizing stationary beads supporting a submicron spherical metal shell was achieved. A small aperture at the base admits visible light that excites a surface-plasmon-resonance within the metallic shell. The micron surface-plasmon-resonance sensor (MSPRS) is sensitive to the surface binding of biomolecules through alterations of the angle of reflection and the spheres can be used to visualize conformational changes in the bound biomolecules, for example as the oxidation state changes. D-glucose and L-glucose were tested to verify the anticipated alterations in radiant light, L-glucose being an inactive control. Diffusive biomolecules play key roles in the embryonic development, immune system response, wound healing, tissue homeostasis, and diseases such as cancer. This work seeks to monitor molecular diversity and concentration. The MSPRS enables the measurement of the bound molecules with accuracy not possible with planar sensors.

### Biography

Susan B Klein completed her PhD in Biophysics at University of California (Berkeley) in 1986. She completed her Post-doctoral training at University of Michigan in Biophysics and Radiation Oncology. After several years of bioengineering, she joined Indiana University Cyclotron Facility in 1990 where she examined proton radiation biology and began practicing medical physics. She is one of the seven intellectual property holders of the design, fabrication and operation of Midwest Proton Radiotherapy Institute. She is currently an Associate Director at Indiana University-Purdue University.

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