226b Silica Nanoparticles Dispersed in Hydrogels Using Microfluidics Technology

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This work reports a new technique that uses microfluidics technology for processing nanomaterials. Microchannels defined in poly-dimethyl siloxane (PDMS) using soft lithography distribute nanoparticles within a monomer solution. The solution is subsequently photo-polymerized to yield a polymer with dispersed nanoparticles, and microscopy techniques are used to characterize the material. Currently, silica nano-particles dispersed in a hydrogel have been investigated, but this technique should be applicable to other systems.