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### **Making New Particles One By One**

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This talk will describe the use of microfluidic devices to create new structures with unusual properties and enormous potential for technological applications. The particles are formed using fluid drops as templates, and take advantage of the exquisite control afforded by the use of microfluidic devices to very simply create complex structures. These new structures facilitate the study of new properties of materials. It is also feasible to use these methods to very easily create nanoparticles of almost any material through a microfluidic spray drier. Remarkably, if these nanoparticles are small enough, they are amorphous, even if the material is otherwise always crystalline. For example, it is even feasible to produce amorphous nanoparticles of table salt (NaCl). The talk will also describe how it is feasible to produce large quantities of these materials, despite making the particles one at a time. This makes the particles valuable for both fundamental studies and for technological applications