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Sensor Platforms for High-Throughput Analysis of Materials Libraries

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The multidimensional nature of the interactions between the composition, process parameters, and end-use conditions of functional materials result in significant materials development challenges. To accelerate discovery and optimization of materials, combinatorial and high-throughput methods combine parallel materials synthesis with automated materials screening. Rapid materials characterization on microscale remains the key challenge. In this presentation, we will discuss our applications of microfabricated sensors for high-throughput characterization of combinatorial functional materials. Microfabricated sensors are an attractive addition to the infrastructure of analytical instruments for combinatorial materials science. Using several examples from our labs, we will demonstrate attractiveness of microfabricated sensors and importance of a proper selection of transduction principles.