

Microfabricated Devices for the Acquisition of Chemical and Biochemical Information

J. Michael Ramsey
Oak Ridge National Laboratory
Oak Ridge, Tennessee 37831-6142

Much of the recent effort on microfabricated devices has been devoted to fluidic structures. These devices have been referred to as Lab-on-a-Chip technologies. The long term goal of the Lab-on-a-Chip is to produce devices that integrate the various laboratory operations normally associated with an assay into a single microfabricated structure. The potential advantages of the Lab-on-a-Chip include automated procedures, nanoliter scale chemical and biochemical assays that can be moved into the field or potentially used as emplaced sensors. Moreover, these devices will enable high throughput processing in the laboratory while increasing the precision and accuracy of the information gathered. Several examples of monolithically integrated Lab-on-a-Chip devices will be discussed.

Research sponsored by Office of Research and Development, U.S. Department of Energy, under contract DE-AC05-00OR22725 with Oak Ridge National Laboratory, managed and operated by UT-Battelle, LLC.