Preface

The analytical chemistry community is moving toward the application of microdevices in many analytical techniques. This shift is being driven by the many advantages provided by microdevice methods, including increased speed of analysis, lower sample size requirements, and cost savings associated with reduced reagent consumption, waste, and labor. The development and eventual commercialization of current and future analytical microdevices rely on advances in areas beyond the scope of analytical chemistry community, however. New detection methods, new materials, and new fabrication methods will be required to create the next generation of such devices, microdevices with analytical applications much more diverse than those currently available.

As an engineer working in an analytical laboratory, I fully understand the need for interactions between the analytical and engineering communities with respect to the development of these microdevices. Each must understand the issues and challenges faced by the other, so that by working together, they can generate new ideas to help overcome the problems. The purpose of this special issue is to introduce a diverse audience to the development efforts currently underway from both the analytical and engineering perspectives on microdevice technologies. I have included articles that reflect a number of different aspects of microdevice development efforts, with the hope that your research may advance through an understanding of the efforts and challenges faced by researchers working in other areas of microdevice development.

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Jerome P. Ferrance
Department of Chemistry
University of Virginia