

Introduction, Recent Advances in Immunochemistry and Their Application to Agrochemicals

The cluster of papers presented here represent a cross section of the topics discussed at the Agrochemicals Division Symposium on Recent Advances in Immunochemistry and Their Application to Agrochemicals, held at the 232nd National Meeting of the American Chemical Society in San Francisco, CA (September 10–14, 2006). The symposium showcased the application of immunochemical analysis to a wide variety of analytes in diverse matrices as well as new automation capabilities, novel detection techniques for bioanalytical methods, and the coupling of immunoextraction techniques with instrumental detection.

Participants from Asia, Europe, and North America provided an international backdrop to the symposium and illustrated the worldwide application of immunochemical analysis. Future symposia will continue to focus on the advancements and applications of immunochemical and related bioanalytical techniques to meet new analytical requirements.

The challenge of achieving ever lower detection requirements in complex matrices necessitates increasing innovation in every aspect of the analysis. The presence of a multitude of potential sample interferences further illustrates this need. Additional complications arise when multiple analytes must be determined in a single sample. These issues warrant periodic reviews of technological advances that are beneficial to analysts from diverse disciplines.

The papers included here discuss advances in immunoassay detection for the analysis of water and environmental samples and urinary biomarkers, the simultaneous detection of different proteins for food analysis, and the application of nanotechnology to agricultural and food chemistry. An efficient immunoconcentration method for natural products used in traditional Chinese medicine is also described. The on-line coupling of immunoextraction separation and cleanup techniques with instrumental detection is presented and provides detailed information for method development. Together, these papers provide insight into the advances in immunochemical methods for residue analysis.

Jeanette M. Van Emon

U.S. Environmental Protection Agency, P.O. Box 93478, Las Vegas, Nevada 89193

Weilin L. Shelver

U.S. Department of Agriculture, 1605 Albrecht Boulevard, Fargo, North Dakota 58015

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