

Special Issue on
**Novel Microbial Diagnostic Methods for Clinical,
 Environmental, and Food Samples**

CALL FOR PAPERS

Rapid, sensitive, and accurate detection and identification of microbial entities are a critical issue for ensuring timeliness of clinical, environmental, and food safety interventions. With the advent of new technologies in the field of biomedical sciences, the resolution of microbial detection methods has improved tremendously. Currently, most of the advanced microbial detection methods involve multidisciplinary expertise (such as biology, chemistry, physics, engineering, material science, genomics, statistics, and bioinformatics). The advancement of rapid microbial diagnostics fueled by these disciplines along with the growth of closely associated fields like nanotechnology and “omics” has brought opportunities as well as an immense challenge for researchers and practitioners to adopt appropriate methods conducive to their respective applications and sample types.

The scope of this special issue is to provide a multidisciplinary platform for researchers from a diverse scientific, technological, and engineering background to publish high-quality contributions in forms of research articles as well as reviews addressing the recent development of microbial detection in clinical, environmental, and food samples of public health importance. Articles reporting the development of novel sample preparation and detection methods, diagnostics methods for on-site or point-of-care applications, methods for characterization of microorganisms isolated from clinical, environmental, and food samples, and others are some examples that will fit within the scope of this special issue. Articles focusing on the future prospect, opportunities, and challenges in the field of rapid microbial diagnostics are also welcome.

Potential topics include but are not limited to the following:

- ▶ Development of novel detection methods for human-pathogenic bacteria, viruses, parasites, yeast, mold, and other microbial cells from clinical specimens, environmental samples, and food or feed products
- ▶ Novel technologies/methods/protocols for the preparation of samples for rapid microbial detection and differentiation
- ▶ Application of nanotechnology and nanoscience in microbial diagnostics
- ▶ Development of sensors and biosensors for rapid detection of microorganisms (including immunosensors, cell-based sensors, aptamers, nanobiosensors, electrochemical sensors, microfluidic sensors, and single-molecule sensing)
- ▶ Application genomics (including metagenomics and next generation sequencing) for detection and characterization of microbes
- ▶ Molecular detection and characterization of single microbial isolate
- ▶ Development of novel methods or media for isolation of pathogens
- ▶ Rapid screening of antimicrobial resistance genes and bacteria from food products, environmental samples, and clinical specimens
- ▶ Microbial diagnostics in human microbiome research

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Manuscript Due

Friday, 20 January 2017

First Round of Reviews

Friday, 14 April 2017

Publication Date

Friday, 9 June 2017