Development of Nano Devices and Nanotechnologies for Environmental Monitoring and Remediation

The use of nanodevices and nano-based technologies in environmental monitoring and remediation is an exciting area, which is attracting interest among scientific, engineering and regulatory communities in the world. Nanomaterials in general have a potential to clean the environment, develop sensing materials, and provide sustainable infrastructure. Unfortunately, due to the lack of information and reliable data, nanomaterials may have implications for human health and the environment. Thus, when developing and applying such technologies, one critical aspect is to consider both nanomaterials and their applications within the context of sustainability. This symposium invites oral and poster presentations on the following aspects: i) "Green" preparation routes of nanomaterials for environmental monitoring and remediation, ii) Development of simple nano(bio)sensors with excellent selectivity and detection limits that are suitable for rapid processing of multiple samples and real-time detection; iii) Transformation of contaminants, including those of emerging concern, using nanomaterials/nanodevices; iv) Role of environmental parameters and stressors on the performance of nanomaterials in sensing and treatment; v) Possible implications of nanomaterials (i.e., unwanted interactions, unwanted toxicity) when used in sensing and treatment applications, and (vi) energy production using nanomaterials/nanodevices while providing environmental remediation of waste streams.

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