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Seminar title:

Molecularly Imprinted Polymer-Based Electrochemical Sensors for Environmental Contaminant Detection

Seminar abstract:

Molecularly imprinted polymers (MIPs) are emerging as powerful artificial recognition materials for the selective detection of environmental contaminants. Their high stability, low cost, and tunable selectivity make them attractive alternatives to biological receptors in electrochemical sensing platforms. This seminar introduces the fundamentals of MIP synthesis and their integration into electrochemical sensors for environmental monitoring applications.

Special emphasis will be placed on the detection of emerging contaminants such as pesticides, pharmaceuticals, PFAS, and glyphosate in complex environmental matrices. The role of conductive nanomaterials, including graphene and metallic nanoparticles, in improving sensor sensitivity and analytical performance will also be discussed. Finally, current challenges and future perspectives for portable and real-time sensing technologies based on MIPs will be presented.

Title lesson on topics of common interest:

Advanced Functional Materials for Electrochemical Applications.