

## Effective nanosensors for the selective detection of metal ions

F.Ikram<sup>1</sup>, A.Qayoom<sup>2</sup>, M Raza Shah<sup>3</sup>

<sup>1</sup> N.E.D. University of Engineering and Technology, Karachi, Pakistan

<sup>2</sup> N.E.D. University of Engineering and Technology, Karachi, Pakistan

<sup>3</sup> International Centre for Chemical and Biological Sciences, Karachi, Pakistan



### Abstract

**T**ransition metal nanoparticles of plant based polyphenols were synthesized. Conjugation of metal with plant based polyphenol was confirmed by FT-IR, UV-visible spectroscopy and Dynamic light scattering (DLS). To examine their potential and chemical sensing property, different metal salt solutions were screened. Only one metal ion altered the absorption intensity while others did not produce any change in absorption intensity of nanoparticles. The sensing ability of synthesized nanoparticle was checked in biological samples (plasma, serum) and environmental samples (tap water). The stability of nanoparticles was checked at elevated temperature (100 °C). For in vivo and in vitro studies stability was also checked at different concentrations of NaCl (1-100 μM).

### Biography:

Farhat Ikram has completed her Masters in Industrial Chemistry in 2016 and enrolled in PhD since 2017 in NED University of Engineering & Technology. During her M.S. research work she has synthesized nanosensors for the selective detection of antibiotic (gentamicin) and heavy metal (Pb<sup>2+</sup>). With that she also did research to observe synergistic effect of flavonoid coated silver nanoparticles against fungus (*Aspergillus niger*) which is very helpful in nanomedicine. She has published 5 papers in reputed journals. She is a chemistry Lecturer at NED University of Engineering & Technology since 2016 and also a member of National Academy of Young Scientists.

1. Epicatechin coated silver nanoparticles as highly selective nanosensor for the detection of Pb<sup>2+</sup> in environmental samples; December 2018: Journal of Molecular Liquids; DOI: 10.1016/j.molliq.2018.12.146
2. Synthesis of Epicatechin Coated Silver Nanoparticles for Selective Recognition of Gentamicin; November 2017: Sensors and Actuators B Chemical 257, DOI: 10.1016/j.snb.2017.11.038
3. Synergistic Effect of Epicatechin Coated Silver Nanoparticles on Antimicrobial Activity of Gentamicin against *Aspergillus Niger*; December 2016; DOI: 10.12816/0044609

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