

## **Serum Amyloid A sensing nanointerface integrated polymer assembly detecting neonatal sepsis infections**

**Nidhi Chauhan**

Amity University, India

Neonatal sepsis is a main cause for the increasing rate of morbidity and mortality in neonates across the globe. About 1.6 million deaths in developing countries annually are caused by neonatal sepsis. Neonatal sepsis is a condition caused by bacteria, virus or fungi in bloodstream. Based on the occurrence neonatal sepsis is categorized into two early-onset sepsis (EOS) and late onset-sepsis (LOS). EOS is observed within 72 hrs. of life whereas, LOS is observed from 1 week to 90 days of life caused due to the unhygienic surrounding environment. There are several biomarkers that increase their level during the inflammation. In the presented work an electrochemical biosensor was fabricated based on the imprinting technology for serum amyloid A (SAA) that is a biomarker for neonatal sepsis detection the level of SAA elevates due to the infection within 6-8 hours of occurrence and decreases at normal conditions. For better performance of the biosensor it was modified with different nanomaterials such as multi-walled carbon nanotubes (MWCNTs), manganese oxide nanospheres (MnO<sub>2</sub>) and cobalt oxide nanoparticles (Co<sub>3</sub>O<sub>4</sub>) providing better catalytic property, higher electron conductivity, surface-to-volume ratio. The fabricated biosensor operates in a dynamic detection range 1  $\mu$ M to 0.01 pM and the detection limit was very low as 0.01 pM

### **Biography**

Dr. Nidhi Chauhan has completed her PhD from M.D. University, Rohtak in 2012. Thereafter she was appointed as Assistant Professor in the Amity Institute of Nanotechnology in May, 2013. Dr. Nidhi Chauhan has brilliant academic record with outstanding achievements in research in the area of bio-molecules, nano-materials and electro-chemistry. She has published 92 high quality research papers in International journals with average factor of more 2.6 and H-index of 29 with total citation of 2663. Her research work has been recognized by ICMR and she was awarded Shakuntala Devi Amir Chand award. She has been awarded young scientist award by DST, New Delhi and visiting scientist fellowship 2014-15 by Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore