Journal of
Electrical Engineering and Electronic Technology

Abstract

# Point of care sensors: Future of healthcare technologies

**Ashish Mathur**
*Amity Institute of Nanotechnology, Amity University, Sector-125, Noida, India*

## Abstract:

Microfluidic and sensors group at Amity Institute of Nanotechnology, Amity University, Noida is engaged in the development of new cost-effective point of care (PoC) devices for using them in connected health technology. The reduction of size in the microfluidic device has the advantage as lesser reagents and smaller sample volumes are required; and simultaneously open the door for rapid clinical diagnostic test. Our aim is to design a novel sensor comprising nanomaterials for variety of applications for affordable healthcare needs. We are working on advance sensor technologies to meet the societal demands. We have developed modern sensors for various applications not only related to healthcare but also in the areas of agriculture, food management, for example, detecting micro-plastics in bottled water, pesticides from food chain, a sensor for detecting caffeine in hot and cold beverages, sensors for advance disease diagnosis have also been developed for detecting chikungunya, dengue, diabetes and cardiac bio-markers, all based on microfluidic platforms. We are also using cost effective screen-printed paper electrodes combined with paper based microfluidic channels. Finally, we have also shown how these devices can be connected to global wireless networks for the development of robust connected health technology. Apart from carbon-based nanomaterials our group is also working on various other nano-hybrid materials.

## Biography:

Dr Ashish Mathur has joined AINT in February this year as Assistant Professor. Prior to this Dr Mathur worked as a research associate at the nanotechnology and integrated bioengineering centre (NIBEC), the University of Ulster, UK (2010-12).

## Recent Publications:

1.Tweedie M., Soin N., Roy S. S., Kumari P., Mathur A., Mahony C., Papakonstantinou P.,and McLaughlin J. A.D. (2008), The use of nanotube structures in reducing the turn-on voltage in micro-discharges and micro-gas sensors. proceedings SPIE, 7037

[2] Mathur, A, Tweedie, M, Roy, SS, Maguire, PD and McLaughlin, JAD (2009) Electrical and Raman Spectroscopic Studies of Vertically Aligned Multi-Walled Carbon Nanotubes. Journal of nanoscience and nanotechnology, 9 7

[3] * Mathur, A, Roy, SS, Tweedie, M, Mukhopadhyay, S, Mitra, SK and McLaughlin, JAD (2009) Characterisation of PMMA microfluidic channels and devices fabricated by hot embossing and sealed by direct bonding. Current applied physics, 9 6

[4] Mathur, A, Wadhwa, S, Byrne, JA, Roy, SS and McLaughlin, JAD (2009) Experimental Demonstration of Hydrophobicity Variation in Carbon Nanotubes by Surface Modifications. e-Journal of Surface Science and Nanotechnology, 7 . pp. 334-336. ISSN 1348-0391

[5] Mukhopadhyay, S, O'Keeffe, P, Mathur, A, Tweedie, M, Roy, SS and McLaughlin, JAD (2009) Effect of Surface Modification on laminar Flow in Microchannels Fabricated by UV-Lithography. e-Journal of Surface Science and Nanotechnology, 7 . pp. 330-334. ISSN 1348-0391


**Webinar on Lab-on-Chip; May 15, 2020; 12:30 pm (GMT+3)**

**Citation**: Ashish Mathur; Point of care sensors: Future of healthcare technologies; Webinar on Lab-on-Chip; May 15, 2020; 12:30 pm (GMT+3).