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Engineering carbon nanomaterials and nanocomposites for engineering and biomedical applications

Wenhui Song¹, Toktam Nezakati¹, Alexander M Seifalian¹, Edward Boughton², Asim Ray², Zhengxiao Guo¹ and Srinivasan Sampath³

¹University College London, UK

²Brunel University, UK

³Indian Institute of Science, India

Owing to their low-dimensions at nanoscale, carbon base nanomaterials including carbon nanotubes, graphene and graphite nanosheets, show intriguing self-assembling behaviours. Their excellent anisotropic physical properties, large surface area, high electrochemical activity, low density and biochemical properties, are promising for more high-value-added products such as nanocomposites, electronics, energy storage and as well as biomedical application including sensors, devices and drug delivery. The innovations in controlled growth, post-synthesis functionalisation and process of carbon nanomaterials and their applications are still continuing. The talk presents the recent research progress on the processing carbon nanomaterials and their hybrid composites through various assembling and self-assembling strategies. The engineering and biomedical applications based on carbon nanotubes, graphene and their hybrid nanocomposites have been demonstrated from amperometric biosensors, to nerve repairs and cancer treatment.

w.song@ucl.ac.uk