

## **Synthesis of y-tip graphitic nanoribbons from alcohol catalytic chemical vapor deposition on piezoelectric substrate**

### **ABSTRACT**

We report the synthesis of Graphitic Nanoribbons (GNRs) using Alcohol Catalytic Chemical Vapor Deposition (ACCVD). Bulk GNR was synthesized directly on a piezoelectric substrate using one-step ACCVD. The synthesized GNRs were characterized by X-Ray Diffraction (XRD), Scanning Electron Microscope (SEM), Transmission Electron Microscope (TEM), Energy Dispersive X-Ray (EDX), Atomic Force Microscopy (AFM), and Raman spectroscopy. The characterization results showed Y-tip morphology of bulk and filamentous as-grown GNR having varying width that lies between tens and hundreds of nm and length of several microns. Based on the thickness obtained from the AFM and the analysis from the Raman spectroscopy, it was concluded that the synthesized GNRs are multiple-layered and graphitic in nature. With the direct synthesis of GNR on a piezoelectric substrate, it could have applications in the sensor industries, while the Y-tip GNR could have potentialities in semiconductor applications.