Investigation of GaN / AlGaN nanowires

Leonardo Lari
University of Liverpool, Liverpool, Merseyside, UK.

Four different configurations of GaN / AlGaN nanowires supplied by Infineon Technologies AG have been investigated during the first four months of this project. Transmission electron microscopy (TEM) has been applied to both harvested nanowires and to half of nanowires samples supported on the original sapphire substrate. The TEM bright field images of the nanowires show a high density of stacking faults in the material. Subsequent chemical analysis made in a scanning transmission electron microscope (STEM) has been used to analyze the distributions of Al, Ga, N and impurity elements. This presentation will discuss the microstructure of one configuration of nanowire materials and correlates the results with some preliminary Raman spectroscopy measurements.