

A simple route to increase electrical conductivity of Graphene/CNTs thin films by compression

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Abstract: Electrical conductivity is one of the most important and attractive properties of carbon nanoallotropes with graphenic structure. We demonstrate here a great improvement in the electrical conductivity of carbon nanostructured thin films by compression or polishing. It is shown that the sheet resistance of compressed thin films of carbon nanomaterials or hybrids is remarkably decreased in comparison with the as deposited films. The number and efficiency of the interconnections, the distance between the nanostructures as well as their orientation are highly altered by the compression favouring the electrical conductivity of the compressed samples.

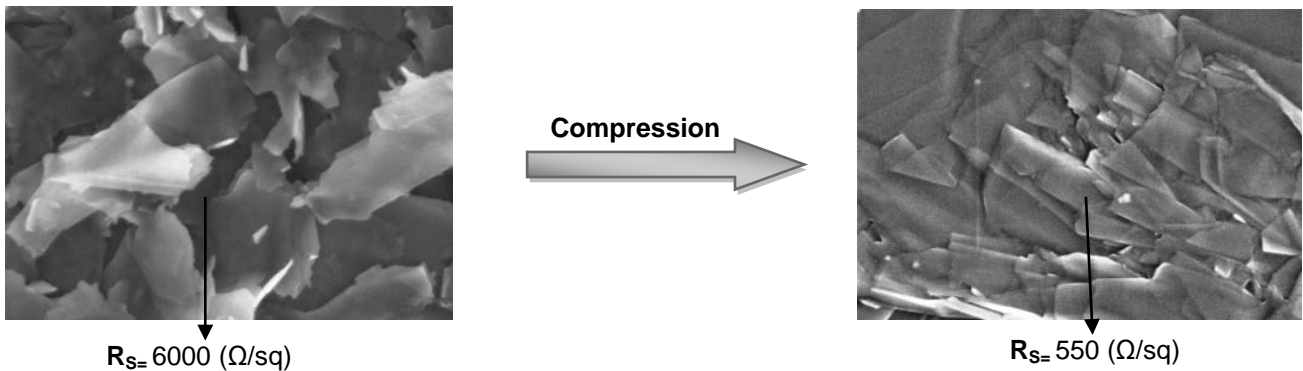


Figure: Characteristic SEM images of the pristine graphene thin films before (left) and after compression (right) and the impact of this on their sheet resistance.