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Interconnecting Ag-NWs by argon ion beam irradiation

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Interconnection between Ag-NWs is essential for the integration and assembly of NWs networks to enable optoelectronics and nanoelectronics applications. In this report, joining of Ag-NWs through argon ion beam irradiation technology is demonstrated. A range of experimental traits of constructing X-, and II-shapes molecular junctions between Ag nanowires and the utilization of the argon ion beam irradiation induced nanowelding technique to form functional metal NWs networks is conferred. Scanning electron microscopy, X-ray diffraction and transmission electron microscopy results revealed that Ag-NWs are effectively connected to each other on intersecting positions and crystal structure also remained un-damaged. Besides, technical hindrances facing the ion irradiation induced nanowelding technology are also discussed. A perspective is given for using argon ion irradiation induced welding technique for the construction of random networks of well-connected nanowires.

Biography

Honey S. is working as a Graduate Research Student (PhD) at Centre of Excellence in Solid State Physics, University of Punjab, Lahore, Pakistan. She is a fellow of UNESCO UNISA AFRICA Chair in Nanosciences/Nanotechnology and Nanosciences African Network (NANOAFNET), an ICTP network as well. She has published eight papers in reputed journals during her PhD studies.

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