

Fabrication of PEDOT:PSS / graphene hybrid materials for enhanced thermoelectric properties

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Thermoelectric generators (TEGs) are very efficient system in energy harvesting technology. It is friendly environment method and have abundant resource relatively. Unfortunately, there are some problems for application of the TE devices. Therefore, many researchers recently have studied TE materials for enhanced efficiency. To achieve of high ZT, good thermopower and thermal conductivity is required without decreasing of conductivity. PEDOT:PSS is conducting polymer and promising TE materials. But, its TE properties difficult to application due to low conductivity. To overcome above limit, we had studied TE performance of PEDOT:PSS/graphene composite materials. Surface morphology of the hybrid materials were analyzed by SEM and AFM. Synergic effects of composite film were also demonstrated using RAMAN, UV-vis spectrum. Electrical conductivity and thermoelectric property were measured by 4-probes station device.