



## **Experimental Studies on piezoresistive sensing nanocomposites and piezoelectric energy generating nanocomposites**

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In the past few decades, nanomaterials attracted attentions of researchers in science and engineering due to their extraordinary physical characteristics stemming from strong covalent bonding among atoms, high specific surface (surface area/volume), etc. Among nanomaterials, carbon nanomaterials such as carbon nanotube, graphene, etc. are employed in numerous studies due to remarkable mechanical/piezoresistive (change in resistance) characteristics, and piezoelectric (voltage generation due to external force) nanomaterials such as ZnO, BaTiO<sub>3</sub>, PZT nanoparticles, etc. are utilized due to outstanding electric power generating characteristics. These nanomaterials received attention in electronics and aerospace engineering since 2000s, and recently utilized in civil engineering.

This lecture deals with fabrication and characterization of the nanocomposites intended for the applications to piezoresistive stress/strain sensing, and piezoelectric energy generation. In addition, future prospect of utilization of the nanocomposites in the application sectors will be also discussed.