

Inorganic nano filler in polymer nanocomposites its thermal behaviours

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Abstract

Thermal analysis is one of the oldest technique for the analysis of materials for the test of materials to be genuine or fake, on the basis of simple heat test. Due to enormous advances in material sciences and day by day new materials are added up to the life of human being, so quality and perfection is highly in need with features such as low weight, high tensile strength, excellent physical and chemical properties, so thermal characterization is an ideal tool for the determining these parameter as well as other transition and materials properties. In the present presentation, various research work performed on polymer nanocomposites of nano particles filler such as Calcium, barium, zinc, tin, silver were highlighted taking matrix as polymer. Research work performed by various scientists in polymer nanocomposites for material development using thermal analysis tool will also be discussed and also highlight its future aspect, behaviors of T_g and T_d will be discussed with the increase in nanoparticles loadings in polymer matrix. Various analytical tool such as XRD, FTIR, SEM, EDS, and UV-Vis spectrum of Polymeric films of Nano composites will also be used for correlation and characterization of materials.

He has over 30 publications in various national and international journals that have been cited over 85 times and his publication H-Index is 5 and has been serving as an editorial board member of journal Composite Materials Research.

1. Neetika Singh, HariMadhav, ShwetaYadav, GautamJaiswar, "The Impact of Vanadium, Sulphur and Dysprosium doped Zinc Oxide Nanoparticles on Various Properties of PVDF/Functionalized-PMMA Blend Nanocomposites: Structural, Optical and Morphological Studies", Journal of Applied Polymer Science, DOI: 10.1002/app.47116 (Aug 2018)
2. Neetika Singh, HariMadhav, ShwetaYadav, GautamJaiswar. "Critical Evaluation of Thermal, Optical and Morphological Properties of V, S and Dy Doped-ZnO/PVDF/Functionalized-PMMA Blended Nanocomposites." Journal of Inorganic and Organometallic Polymers and Materials (2018): 1-10 On-chip passive optical diode with low-power consumption; December 2018; Optics Express 26(25):33463;DOI: 10.1364/OE.26.033463
3. SonamRathore, HariMadhav, and GautamJaiswar. "Efficient nano-filler for the phase transformation in polyvinylidene fluoride nanocomposites by using nanoparticles of stannous sulfate." Materials Research Innovations (2017): 1-8.
4. Agarwal, Harshika, ShwetaYadav, and GautamJaiswar. "Effect of nanoclay and barium sulfate nanoparticles on the thermal and morphological properties of polyvinylidene fluoride nanocomposites." Journal of Thermal Analysis and Calorimetry 129.3 (2017): 1471-1479.



Biography:

Dr.Gautam Jaiswar has completed his PhD at the age of 27 from Dr.BhimraoAmbedkar University Agra. He has qualified national level test for Assistant Professor(in the year 2003) and now is Professor of Chemistry. He is having 15 years of Teaching and Research(Polymer nanocomposite) Experience.

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