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Paper Title: Surfactant Assisted Dispersion of Graphene and its Epoxy Nanocomposites

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Abstract: Graphene is emerged as superior reinforcing filler for the polymer matrix due to its superior mechanical, electrical and thermal properties. But, the challenge is that graphene form aggregates in the polymer matrix due to the strong Vander waals forces of attraction between the graphene nanosheets. In this regard, surfactant assisted dispersion strategy will be adopted to overcome the problem of aggregation in epoxy nanocomposites. This project will be carried out in two stages, first is to establish the high concentration dispersion of graphene using the suitable surfactant, and second is to use this high concentration dispersion of graphene for the preparation of epoxy nanocomposites. The graphene dispersion and its nanocomposites will be characterized using various characterization techniques such as UV-Vis-NIR spectroscopy, Flexural testing, Tensile testing, Scanning electron microscope (SEM) studies.