Fabrication, Testing, and Optimization of MWCNT Epoxy Polymer Nanocomposites Through Taguchi, TOPSIS, and Response Surface Techniques

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Editor's note: The optimization of nanocomposites with different volume fractions of nanofillers is a classic multi-criteria decision-making challenge. Nyonyi et al. introduced a hybrid decision-making approach that combines Taguchi methods, TOPSIS, and Response Surface Methodology (RSM) to identify the most effective nanocomposite. This innovative approach successfully improved the mechanical properties of epoxy-E-fiberglass nanocomposites reinforced with multi-walled carbon nanotubes (MWCNTs). The optimization results confirmed that the content ratios of MWCNTs and other components in the system significantly affect both tensile and flexural strength.

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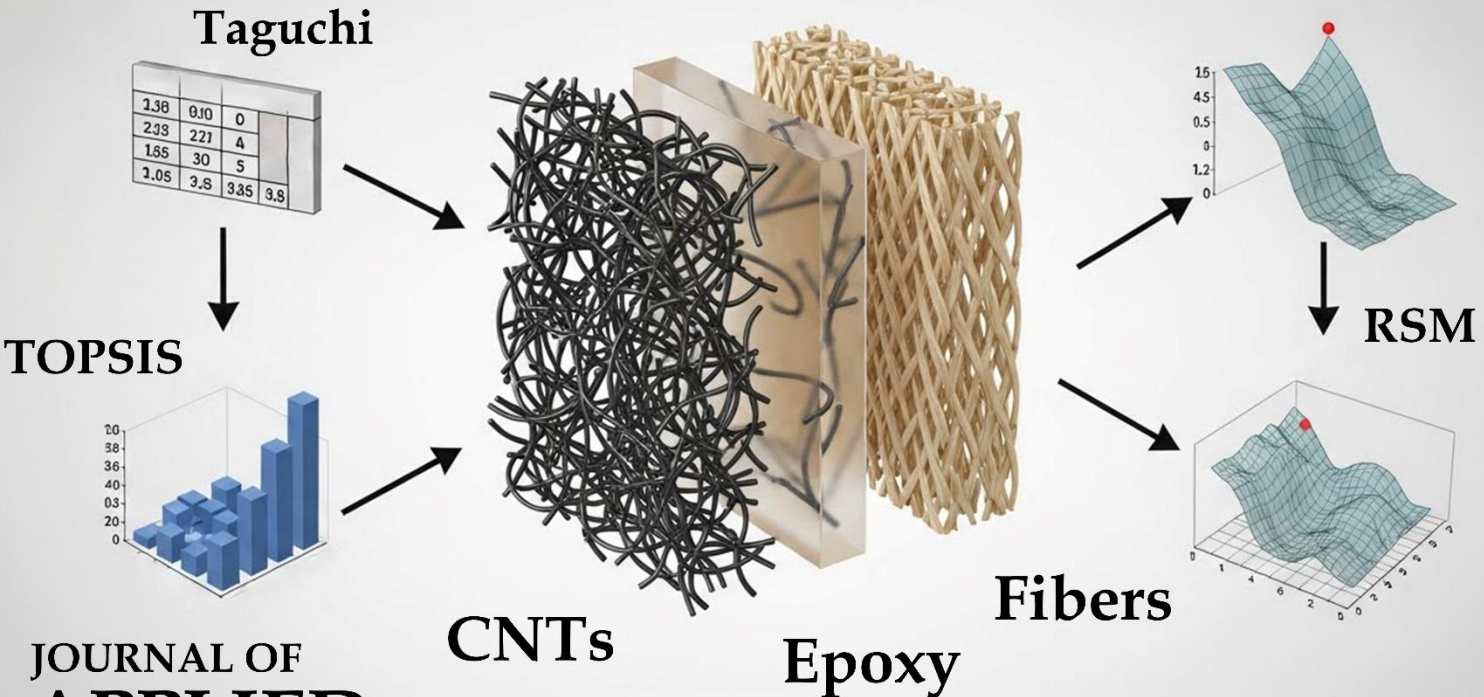

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