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**PREDICTING THE MECHANICAL PROPERTIES OF PA6/EPR-G-MA/GF COMPOSITES USING ANFIS METHOD**

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In this research, we developed and used a novel method to estimate the final mechanical properties of the polymer mixtures including polymer composites. Artificial neural network (ANNS) and adaptive neuro-fuzzy inference system (ANFIS) methods were mainly employed to perform these predictions. Here, we studied a polymer composite system reinforced with glass fiber (GF). Therefore, various compositions of PA with maleated ethylene-propylene-rubber toughened polyamide 6 (EPR-g-MA) as a toughening agent and reinforced with short glass fiber were prepared. We used an industrial twin screw extruder for mixing at different levels of feeding rates (100-200kg/h), screw speeds (200-300 rpm) and mixing temperatures (240-260 °C). In addition, mixing was performed on PA6 matrix including 5,10,15,20 %wt rubber content and 5,10,15,20 %wt short glass fiber content. Both ANNS and ANFIS methods were employed to investigate the mechanical properties such as yield strength, izod impact strength and modulus. The results obtained through our newly developed method were very well adopted the earlier reported experimental data including minimum errors.