

# JOINT E-CONFERENCE ON RENEWABLE ENERGY AND SUSTAINABILITY & GEO SCIENCE AND GREEN TECHNOLOGY MARCH 15-16, 2023 | WEBINAR



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### Co<sub>3</sub>O<sub>4</sub>/PMMA nanofibrous membrane Constructed electromagnetically for high-efficiency wave absorption

With the quick advancement of modern communication technology, electromagnetic wave (EM) absorption materials have become increasingly indispensable to daily life and even national strategic areas. However, fabricating and developing highly lightweight and efficient adsorption materials is still a big challenge. Here, we proposed a new route to produce new nanofibers, Co<sub>3</sub>O<sub>4</sub>/PMMA using the electrospinning technique. The particular porous structure of the new composite nanofiber enhances the high-efficiency absorbing abilities. The results indicated that magnetic Co nanoparticles are uniformly dispersed along nanofibers. SEM observations reveal that the fibers are lengthy and uniform and are loaded with well-distributed Co(acac)<sub>3</sub> nanoparticles, which are evidenced by XRD. The minimum reflection loss (RL min) value was investigated to be -12 dB at 16.50 GHz with a matching thickness of 2.5 mm. the new nanofiber composite considers promising for resolving the problems of weak absorption in the low-frequency range and narrow bandwidth absorption.