

**IN-SITU PHOTOCHEMICAL SYNTHESIS OF NANOCOMPOSITE FILMS
CONTAINING AU, AG AND MNO NANOPARTICLES WITH
THIOXANTHONE-ANTHRACENE-9-CARBOXYLIC ACID AND
INVESTIGATION OF THEIR ROLE FOR THE PHOTOCATALYTIC
DEGRADATION OF METHYLENE BLUE**

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In this study, Ag, Au and MnO nanoparticles were synthesized in the presence of a one component type II photoinitiator, thioxanthone-anthracene-9-carboxylic acid (TX-ANCA) [1]. Distribution and particle size changes of nanoparticles were examined both in solution and polymer. Especially, in situ formation of Ag and Au nanoparticles in solution was obtained in very small size and nearly monodisperse distribution was found in a short irradiation time. It was also observed that temperature had an effect on nanoparticle size, shape, distribution. The characterization of the synthesized nanoparticles were performed by UV-Vis spectrophotometry, DLS and SEM techniques. Additionally, prepared metal/polymer nanocomposite films were examined for the photocatalytic degradation of methylene blue.

[1] Mutlu, S., Watanabe, K., Takahara, S., Arsu, N., "Thioxanthone-anthracene-9-carboxylic acid as radical photoinitiator in the presence of atmospheric air," Journal of Polymer Science Part A-Polymer Chemistry, vol.56, no.16, pp.1878-1883, 2018