

OP-63**Synthesis and Characterization of Semiconductor Clay Nanocomposites and Degredation of Organic Pollutants by Photocatalytic Ozonation Process**Murat KIRANŞAN^{a,*}, Alireza KHATAEE^b, Semra KARACA^c,^aDepartment of Chemistry and Chemical Processing Technologies, Gümüşhane Vocational School, Gümüşhane University, Gümüşhane 29100, Turkey^bResearch Laboratory of Advanced Water and Wastewater Treatment Processes, Department of Applied Chemistry, Faculty of Chemistry, University of Tabriz, Tabriz 51666-14766, Iran^cDepartment of Chemistry, Faculty of Science, Atatürk University, Erzurum 25240, Turkey**murat.kiransan@gumushane.edu.tr**

Over the past decade, the production and consumption of organic compounds has increased throughout the world. Drugs are a large family of pharmaceutical compounds used for therapeutic purposes in human and veterinary medicine [1]. Organic compounds are often released from the aquatic environment from human discharge, veterinary clinics, industrial wastes and agricultural practices [2]. Antibiotic compounds have antibacterial nature. Therefore, the presence of antibiotics in water sources even at very low concentrations leads to an increase in bacterial resistance to antibiotics [3]. AOPs are based on the formation of highly reactive and non-selective radicals with particularly hydroxyl radicals which are effective against organic compounds [4]. The scope of this study was the immobilization of ZnO nanoparticles between the layers of montmorillonite clay (MMT) and assessing the application of ozone-assisted photocatalytic degradation to achieve these limitations [5]. The photocatalytic ozonation process is a popular method for degrading organic pollutants. The synergistic effect of photocatalytic ozonation is a factor that accelerates the breakdown of organic pollutants [6]. As powerful inorganic and organic oxidative species, ozone molecules can capture photo-generated electrons and increase the contribution of h^+ in the formation of reactive radicals. Furthermore, the photocatalytic ozonation process is one of the successful AOPs for the degradation of various organic pollutants in water [7].

References

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