# LİGHT SENSİTİVE COMPOSİTE MİCROSPHERES AND CLEAN ENERGY APPLİCATİONS

**Ali İmran Vaizogullar***Muğla Sıtkı Koçman University, Muğla, Turkey*

**Ahmet Balcı***Muğla Sıtkı Koçman University Muğla, Turkey*[abalci99@yahoo.com](mailto:abalci99@yahoo.com)

ABSTRACT

The core shell materials containg titania can improve the properties of the core including chemical, magnetic and optical properties. More over, composite microspheres may exhibit novel properties that are not found in a single oxide. Recently, it was reported that SiO2/TiO2 composite particles exhibited better photocatalytic properties than the classical oxides such as titania and silica. Synthesis of mesoporous materials with a regular geometry and using as a durable heterogeneous photocatalyst  has become popular in recent years  due to catalyse these materials, adsorption, seperating the medical field and availability, from nanotechnolog. Such microparticles without need a lot of energy plays a major role in the removal of environmental pollutants.Ultrafiltration removal of such contaminants, electrochemical treatment, adsorption although there are some techniques, such as pollution comprises a second due to the materials used in these methods are now lost its importance.

In this study, sol-emulsion-gel methods, microparticles of the desired size  were synthesized. Monodispersed SiO2 microporous microspheres were synthesized by a modifying stöber method.  The results showed that composite particles were about 0.5  μm in diameter, and had a spherical morphology and a narrow size distribution.

The  core shell particles were characterised  by various techniques as FTIR, XRD, FESEM, and their photocatalytic activity for the decomposition of methylene blue (MB) in water.

The optimum conditions for the synthesis of particles, mixing speed and duration of calcination temperature, organic solvents, surface active agents, biomaterials, starting materials was taken into consideration diffrences in concentration by changing the particle size of these parameters , the effect was followed photoactivity. Experiments carried outwith micro-size  particles can be controlled to be synthesized. The degradation effect of  model pollutant (MO) was determined using UV/Vis spectrophotometry.  The amount of surfactant used in the particle size resulted in a decrase after a certain point. However the areas of use of materials obtained from the tests carried out in the laboratory for expanding the applicability of data to reveal the endustrial field were studied. The result of this study shows the potential of applying new generations of catalyst for wastewater purification. Simplicity, low cost, low energy consumption, and solvent-free are the advantages of this proposed method which can be used to photodecompose environmental organic pollutants effectively without heat treatment.