MARMARA UNIVERSITY
FACULTY OF ENGINEERING
ENVIRONMENTAL ENGINEERING DEPARTMENT

ENVE 497/498 ENGINEERING PROJECT
PROPOSAL FORM
FALL 2018

Instructor : Zehra Semra Can

Project Title : Removal of Bisphenol A from Aqueous Solutions by Magnetic Nanoparticles

Proposal No. : *ZehraSCan-1*

Number of Students : 4

Requirements (from students): Each student should spend a minimum of **8 hours** in the lab each week.

Scope of the Project :
Nanosized iron oxide magnetic particles will be produced by coprecipitating Fe^{2+} and Fe^{3+} in alkaline solutions at 60-70^{o}C. Additionally, some iron oxide nanoparticles will be synthesized in the presence of different polymers such as levan, chitosan, etc. The structural and morphological characterizations will be determined by SEM, FTIR, XRD. Then, the potential of iron oxide magnetic nanoparticles for adsorption of Bisphenol A (BPA) from synthetic wastewater will be investigated. Batch adsorption experiments will be performed. The sorption process will be studied with regard to the effects of initial BPA concentration, pH, contact time and temperature. The adsorption equilibrium will be evaluated using the adsorption models.

Hardware/Software/Lab/Equipment Requirements :

Temperature controlled shaker
GCMS

Development Plan :

Literature search on the subject to have a better understanding of the process.
To perform batch controlled adsorption tests.
To analyze the data and prepare an oral presentation and a written report.