**LIST OF TOPICS OFFERED BY THE ADVISORS FOR ENVE 490**

**(2023-2024 I. )**

**Prof. Dr. F. Dilek SANİN**

1. Effect of Sludge Pretreatment on Microbial Numbers from Anaerobic Digesters
2. Removal of Microplastics by Wastewater Treatment: Current Challenges and Possibilities
3. Effect of Pretreatment on Polycarbonate Containing Anaerobic Digesters
4. Anaerobic Digestion of Sludge Following Thermo-Enzymatic Pretreatment

**Prof. Dr. İpek İMAMOĞLU**

1. **Bio-aging of polyethylene & its effect on sorption of organic contaminants**

Which one do you think is more powerful: Microorganisms or Microplastics? What happens if

these two collide in the environment? What are the impacts of this interaction under different

environmental conditions? How can this interaction affect sorption of organic contaminants onto

microplastics?

1. **Sorption of organic contaminants onto pristine & UV-aged microplastics**

Did you enjoy environmental chemistry back in ENVE 102? Do you remember about acid-base

chemistry, ionization...? Would you want to see how such information is applied in real life

environmental problems, such as those related to sorption of ionizable organics onto microplastics?

**Doç. Dr. Y. Dilşad YILMAZEL TOKEL**

1. A literature review on large scale biohydrogen production systems: what is available out there?

2. Domestic wastewater treatment with anaerobic fluidized membrane bioreactor (AFMBR) system: a process optimization (In collaboration w/ CHE department, Prof. Culfaz)

3. Nutrient recovery via struvite precipitation: how to scale up? Can you operate a fluidized bed reactor for nutrient recovery from biogas plant effluents? Is it a sustainable process? What are the needs and next steps? An experimental study to operate a cystallization unit.

4. Life Cycle Assessment (LCA) for Biorefineries: learn how to work with Simapro

5. Scale up of bioelectrochemical reactors for enhanced biofuel generation from wastes