

**2L-10 ANALYTICAL AND ELECTROCHEMICAL TECHNOLOGIES RESEARCH  
LABORATORY**

<b>Department</b>	Department of Chemistry	
<b>Laboratory Responsible</b>	Assoc. Prof. Dr. Melike FIRLAK Asst. Prof. Dr. Duygu AKYÜZ ÇUBUKÇU	mfirlak@gtu.edu.tr dakyuz@gtu.edu.tr
<b>Research Team</b>		
<b>Contact Information</b>	Gebze Technical University Faculty of Science Department of Chemistry Lab. 2L-10 41400 Gebze-Kocaeli	Phone -  Web Site -
<b>General Information</b>	<p><b>Analytical Chemistry Research Subjects:</b> The subjects studied in our research laboratory are development of fluorescence sensors for determination of biological, organic and inorganic analytes, design and preparation of ion/molecular imprinted polymers and stimuli responsive polymers (pH, temperature, electricity etc.) and their applications for removal of metal ions from aqueous solutions, sensors and drug delivery systems.</p> <p><b>Electrochemical Technologies Research Subjects:</b> Electrochemical and spectroelectrochemical characterization, electropolymerization, sensor (pesticide sensor, glucose sensor, molecular imprinted polymer (MIP) sensor etc.), electrochromism, catalyst synthesis and applications, electrocatalyst, electrocatalytic, photocatalytic and PEC hydrogen production, solar cell, electrolysis of water and fuel cell studies are carried out.</p>	
<b>Applications<sup>4</sup></b>	<p><b>Analytical Chemistry:</b></p> <ul style="list-style-type: none"> <li>○ Development of fluorescence sensors</li> <li>○ Adsorption studies</li> <li>○ Preparation of stimuli-responsive polymers</li> <li>○ Preparation of ion/molecular imprinted polymers</li> <li>○ Drug delivery systems</li> </ul> <p><b>Electrochemical Technologies:</b></p> <ul style="list-style-type: none"> <li>○ Electrochemically pesticide determination</li> <li>○ Catalyst synthesis (graphene and its derivatives, inorganic synthesis ...)</li> <li>○ Electrochemical and <i>in-situ</i> spectroelectrochemical analysis</li> <li>○ Electrochromic smart glass material development</li> <li>○ Sensor applications</li> <li>○ Electrode development for fuel cell and water splitting studies</li> <li>○ Dye sensitize solar cell application</li> <li>○ Catalyst design and application for hydrogen production</li> </ul>	

**Laboratory photograph**



**Equipment**

- Microwave oven (Milestone StartS)

**Projects**

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