

Ozgul Gok received her undergraduate degrees in a double major program at Bogazici University, Departments of Chemistry (2006, Hons) and Molecular Biology&Genetics (2007, Hons). She continued in the same university to pursue her Msc (2010) and Ph.D. (2014) degrees in Chemistry. During these years, she has been in the University of Utah, Department of Bioengineering (2011, USA) and the University of Bergen, Department of Biomedicine (2009, Norway) as a short-term visiting researcher. She has completed 2-year post-doctoral period in the School of Medicine, JHU, USA. Currently, she is working as an Assistant Professor in the Department of Medical Engineering, ACU, Turkey. Her research area focuses on the design and development of nanomedicine and polymeric scaffolds for drug delivery, tissue engineering and implant surface modification for cancer therapy and brain injury. So far, she has



been named in 14 SCI publication journals and more than 10 international conference papers. She received the Turkish Prime Ministry Scholarship (2001–2006) and TUBITAK 2211-D National Doctoral Research Scholarship (2013-2014) and TUBITAK 2219 International Postdoctoral Research Scholarship (2015-2016). Her awards include the highest ranking student award for Bsc graduation in Chemistry, Bogaziçi University (2007), BAP Bogazici University Best Doctoral Dissertation Award (2015), Life Sciences Award, Think Global Forum (2018) and Dean’s Outstanding Research Award (2021). Her research interests include biocompatible and functional polymeric materials, nanoparticle-based smart drug delivery systems, biomimetic and peptide-immobilized hydrogel scaffolds and microneedle platforms for tissue engineering, implant coating and three-dimensional biomaterials printing techniques. Since 2017, she

has directed her research into mainly the design of smart drug delivery systems as nanomedicines composed of well-engineered biomaterials and their translation into clinics to provide a wider treatment window for therapeutic agents and inflammatory drugs with an improved quality of patient life.

A short annotation of the course

This lecture series will cover the properties of polymeric biomaterials, their types, and application areas in the medical field. Starting from the synthesis of functional polymeric materials, their conjugation to biomolecules, and preparation of various architectures like nanoparticles, hydrogels, and nanofibers will be explained. The stimuli-responsive polymeric materials will also be covered for both internal (pH, temperature or enzyme) and external (light, ultrasound and magnetic field) environmental changes. Literature examples for their use in targeted drug delivery systems (like cancer cells, mitochondria, and nucleus) and also for regeneration purposes will be given. Together with the theoretical background, two lab sessions will be organized, one of which is about the preparation of lipid-based nanoparticles and the other one includes the gelation of a natural polymer for obtaining a hydrogel scaffold.

Dr. Ozgul Gok paskaitų ciklo tvarkaraštis

Nr.	Data	Laikas	Auditorija/Teams prisijungimas	Temos pavadinimas
1.	09-05(I)	17.00-18.00	FF A-204 Teams prisijungimas: Paskaita Farmacinė biochemija 2022-09-05	Lecture- Overview of polymeric biomaterials
2.	09-06 (II)	11.00-13.00	FF A-204 Teams prisijungimas: Ozgul Gok paskaita 2022-09-06	Lecture- Surface modification and biofunctionalization of nanomaterials
3.	09-07(III)	15.00-18.00	FF Vaistų chemijos Lab.	LAB - Construction of Hydrogel Scaffold

4.	09-08 (IV)	9.00- 10.30	FF A-204 Teams prisijungimas: Ozgul Gok paskaita 2022-09-08	Lecture- Nanocarriers (polymeric nanoparticles, polyerosomes, nanogels)
5.	09-09 (V)	8.30- 9.30	A-202 aud. Teams prisijungimas: Paskaita Vaistų chemija 2022-09-09	Lecture- Nanotechnology-enabled targeted drug delivery
6.	09-12 (I)	17.00- 18.00	FF A-204 Teams prisijungimas: Paskaita Farmacinė biochemija 2022-09-12	Lecture- 3D Bioprinted Scaffolds for Tissue Engineering
7.	09-13 (II)	11.00- 13.00	FF A-204 Teams prisijungimas: Ozgul Gok paskaita 2022-09-13	Lecture-Stimulus-sensitive hydrogels as artificial soft tissues
8.	09-13(II)- 09-16(V)	14.00- 18.00	FF Vaistų chemijos Lab.	LAB - Preparation of Liposomal Nanoparticles
9.	09-14(III)	15.00- 18.00	FF Vaistų chemijos Lab.	LAB - Preparation of Polymeric Nanoparticles
10.	09-15 (IV)	9.00- 10.30	FF A-010 Teams prisijungimas: Ozgul Gok paskaita 2022-09-15	Lecture- Bioimitative and bioactive nanofibers
11.	09-16 (V)	8.30- 9.30	MLK Mažoji aud. Teams prisijungimas: Paskaita Vaistų chemija 2022-09-16	Lecture- Fundamentals of tissue engineering and regeneration