

Dr. Filiz EMLİK

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Department of Chemistry – Boğaziçi University, 34342 Bebek, Istanbul, Türkiye

Education : Post-Graduate

Experience : Over 25 years of teaching experience in chemistry in both higher and secondary education.

EDUCATION

09.2014 – 06.2022

Boğaziçi University,
Institute of Graduate Studies in Science and Engineering,
PhD. Chemistry

PhD Thesis: Redox-Responsive Biodegradable Polymeric Materials for Biomedical Applications

Thesis Advisors: Prof. Dr. Rana Sanyal, Prof. Dr. Amitav Sanyal

09.2012 - 06.2014

Boğaziçi University,
Institute of Graduate Studies in Science and Engineering,
MSc. Chemistry

MSc. Thesis: Targeted Micellar Structures for Anticancer Drug Delivery

Thesis Advisors: Prof. Dr. Rana Sanyal

09.1996 - 06.2000

19 Mayıs University
Faculty of Education,
Chemistry Education

RESEARCH

-Specialized on smart drug delivery systems via nanoparticles specifically dendron/dendrimer-based micelles.

-Cryogels

-Synthesis and characterization of monomers, polymers and polymeric nanoparticles for drug delivery

-Synthesis and characterization of dendrons and their polymer conjugates

COURSES TAUGHT TEACHING AREAS

-General Chemistry (Lecture & Laboratory)

-Organic Chemistry (Lecture & Laboratory)

-Laboratory Education and Experimental Design

-International Chemistry Curricula (IB DP & AP)

-High School Chemistry (GCSE/IGCSE / A-Level equivalent curricula)

EXPERIENCES

06.2025- **Boğaziçi Üniversitesi** **Instructor** **Istanbul**

06.2025-02.2026 **Yeditepe Üniversitesi** **Chemical Engineering-Part Time Instructor** **Istanbul**

06.2025- 08.2025 **Boğaziçi Üniversitesi** **Part Time Instructor (Summer School)** **Istanbul**

- Teaching undergraduate chemistry courses
- Delivering lectures and supporting laboratory-based instruction

09.2023- 09.2025 **FMV Işık High School** **Head of Science Department** **Istanbul**

- Led the Science Department comprising Physics, Chemistry, Biology, Computer Science, and Laboratory teachers
- Coordinated interdisciplinary curriculum planning aligned with IB DP and national education programs
- Oversaw planning, implementation, and quality assurance of academic coursework and examinations
- Prepared students for national and international academic projects and competitions
- Participated in teacher recruitment and delivered teacher training programs

09.2021- 09.2023 **FMV Işık High School** **Chemistry Teacher** **Istanbul**

09.2012-06.2021 **Boğaziçi University** **Research Assistant in Chemistry Department** **Istanbul**

09.2006- 06.2009 **Şişli Terakki High School** **Chemistry Teacher** **Istanbul**

09.2000- 06.2017 **Uğur Publications** **Author of Chemistry Workbooks** **Istanbul**

Awards

» **Research Incentive Award** in the Field of Polymer Chemistry
Issued by Chemists Association in 2020

» **PhD Scholarship** in memory of Dr.Ufuk Sebüktekin in 2018-2019

» **Design and Creativity Award at Innovation Challenge**
Issued by JPL-NASA Türkiye in 2007

Publications

1) **Calik, F.**, Degirmenci, A, Hamida Maouati, H., Sanyal, A. and Sanyal, R. Redox-Responsive "Catch and Release" Cryogels: A Versatile Platform for Capture and Release of Proteins and Cells **Biomaterials Science & Engineering**, 2024 May 13;10(5):3017-3028

2) **Calik, F.**, Degirmenci, A, Sanyal, A. and Sanyal, R. 'Redox-responsive biodegradable dendronized polymers: A side-chain modulation-based fabrication of drug delivery vehicles' **European Polymer Journal, Volume,2023**, 201, 112548

3) Gökçe BB, Boran T, **Emlik Çalık F**, Özhan G, Sanyal R, Güngör S. 'Dermal delivery and follicular targeting of adapalene using PAMAM dendrimers.' **Drug Delivery and Translational Research. 2021**, 11(2):626-646.

4) **Calik, F.**, Degirmenci, A., Eceoglu, M., Sanyal, A. and Sanyal, R. 'Dendron-Polymer Conjugate Based Cross-Linked Micelles: A Robust and Versatile Nanosystem for Targeted Delivery' **Bioconjugate Chemistry 2019**, 30 (4), 1087-1097 **COVER ARTICLE**

5) Unsal, H.; Onbulak, S.; **Calik, F.**; Er-Rafik, M.; Schmutz, M.; Sanyal, A. and Rzayev, J.

'Interplay between Molecular Packing, Drug Loading, and Core Cross-Linking in Bottlebrush Copolymer Micelles'
Macromolecules, 2017, 50, 1342-1352.

» **Weekly Chemistry Exam Preparation Publication (question writing and curriculum-based lesson content development)** Uğur Yayınları, 2003-2006

» **Organic Chemistry – Question Bank** Uğur Yayınları, 2011

» **Organic Chemistry – Conceptual Textbook** Uğur Yayınları, 2013

» **TYT-AYT Chemistry Question Bank** Uğur Yayınları, 2015

Conference Presentations

» Çalık, F. Sanyal, A., Sanyal, R. "Dendron-Polimer Konjugat Esaslı Çapraz Bağlı Miselik İlaç Taşıyıcılar" 31. Ulusal Kimya Kongresi, Eylül 2019. **Oral Presentation**

» Çalık, F. Sanyal, R. "Hedeflendirilmiş Misel Tipi Taşıyıcılar 27. Ulusal Kimya Kongresi" Ağustos 2015 **Poster**

» Çalık, F. Sanyal, R. "Hedeflendirilmiş Misel Tipi Taşıyıcılar" 3. İlaç Kimyası Kongresi Mart 2015 **Poster**

Academic Project Assignments

» Researcher, BAP project in Boğaziçi University (2020- 2021)
Dendronize Polimer Sentezi ve Misel Hazırlanması

» Researcher, TÜBİTAK Project No: 112T840 (2013- 2015)
"Dallanmış Makromoleküllerden Elde Edilen Çekirdeği Çapraz Bağlanmış Miseller"

Certificates

» **Certification of Experimental Usage Animals**
Yeditepe University, Faculty of Medicine / Jan-2014 (2 weeks)

»**IB DP Chemistry – Cat1**
International Baccalaureate / 2022 (3 days)

»**IB DP Chemistry – Cat 2**
International Baccalaureate / 2025 (3 days)

»**IB DP Chemistry – Cat 3**
International Baccalaureate / 2025 (3 days)

»**AP Chemistry – AP Summer Institute (Online)**
College Board, June–July 2025