

Asst. Prof. EMRE BÜKÜŞOĞLU

Personal Information

Office Phone: [+90 312 210 2628](tel:+903122102628)

Fax Phone: [+90 312 210 2600](tel:+903122102600)

Email: emrebuk@metu.edu.tr

Web: <https://avesis.metu.edu.tr/emrebuk>

Education Information

Doctorate, University Of Wisconsin-Madison, Kimya Mühendisliği Bölümü, United States Of America 2010 - 2015

Post Graduate, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, Turkey 2008 - 2010

Under Graduate, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, Turkey 2003 - 2008

Dissertations

Doctorate, Design of Functional Materials Based on Confined Liquid Crystals, University Of Wisconsin-Madison, Kimya Mühendisliği Bölümü, 2015

Post Graduate, Dehydration of alcohol solutions obtained from a solvent recovery process by pervaporation, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2010

Research Areas

Thermodynamics, Separation Operations, Optical Properties, Interface Chemistry, Polymeric Materials, Thermodynamics, Surface Chemistry

Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2018 - Continues

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2017 - 2018

Professional Experience

Deputy Head of Department, Middle East Technical University, Faculty Of Engineering, Department Of Chemical Engineering, 2018 - Continues

Courses

Interfacial Phenomena, Under Graduate, 2017 - 2018

Advising Theses

Büküşoğlu E., LIQUID CRYSTAL - TEMPLATED SYNTHESIS OF POLYMERIC MICROPARTICLES WITH COMPLEX

NANOSTRUCTURES, Post Graduate, B.AKDENİZ(Student), 2019

Kalıpçılar H., Büküşoğlu E., Design of functional materials using liquid crystals as molecular templates, Post Graduate, A.KARAUSTA(Student), 2018

Jury Memberships

Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, September, 2018

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- **Identification and sorting of particle chirality using liquid crystallinity**
AKDENİZ B., BATIR Ö., BÜKÜŞOĞLU E.
JOURNAL OF COLLOID AND INTERFACE SCIENCE, vol.574, pp.11-19, 2020 (Journal Indexed in SCI)
- **Prolate and oblate chiral liquid crystal spheroids**
Sadati M., Martinez-Gonzalez J. A. , Zhou Y., Qazvini N. T. , Kurtenbach K., Li X., BÜKÜŞOĞLU E., Zhang R., Abbott N. L. , Pablo Hernandez-Ortiz J., et al.
SCIENCE ADVANCES, vol.6, 2020 (Journal Indexed in SCI)
- **Programming van der Waals interactions with complex symmetries into microparticles using liquid crystallinity**
Fuster H. A. , Wang X., Wang X., Bukusoglu E., Spagnolie S. E. , Abbott N. L.
SCIENCE ADVANCES, vol.6, 2020 (Journal Indexed in SCI)
- **Addressing challenges in the ultrafiltration of biomolecules from complex aqueous environments**
BÜKÜŞOĞLU E., KOKU H., Çulfaz-Emecen P. Z.
Current Opinion in Colloid and Interface Science, vol.46, pp.52-64, 2020 (Journal Indexed in SCI Expanded)
- **Design Parameters and Principles of Liquid-Crystal-Templated Synthesis of Polymeric Materials via Photolithography**
AKDENİZ B., BÜKÜŞOĞLU E.
LANGMUIR, vol.35, pp.13126-13134, 2019 (Journal Indexed in SCI)
- **Liquid Crystal Templates Combined with Photolithography Enable Synthesis of Chiral Twisted Polymeric Microparticles**
AKDENİZ B., BÜKÜŞOĞLU E.
MACROMOLECULAR RAPID COMMUNICATIONS, vol.40, 2019 (Journal Indexed in SCI)
- **Liquid Crystal-Templated Synthesis of Mesoporous Membranes with Predetermined Pore Alignment**
Karausta A., BÜKÜŞOĞLU E.
ACS APPLIED MATERIALS & INTERFACES, vol.10, pp.33484-33492, 2018 (Journal Indexed in SCI)
- **Self-reporting and self-regulating liquid crystals**
Kim Y., Wang X., Mondkar P., Bukusoglu E., Abbott N. L.
NATURE, vol.557, pp.539-560, 2018 (Journal Indexed in SCI)
- **Dehydration of Industrial Byproduct Solutions for Recycling via Pervaporation-Adsorption Hybrid Process**
BÜKÜŞOĞLU E., KALIPÇILAR H., YILMAZ L.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.57, pp.2277-2286, 2018 (Journal Indexed in SCI)
- **Strain-induced alignment and phase behavior of blue phase liquid crystals confined to thin films**
BÜKÜŞOĞLU E., Martinez-Gonzalez J. A. , Wang X., Zhou Y., de Pablo J. J. , Abbott N. L.
SOFT MATTER, vol.13, pp.8999-9006, 2017 (Journal Indexed in SCI)
- **Active Janus Particles at Interfaces of Liquid Crystals**
Mangal R., Nayani K., Kim Y., BÜKÜŞOĞLU E., Cordova-Figueroa U. M. , Abbott N. L.
LANGMUIR, vol.33, pp.10917-10926, 2017 (Journal Indexed in SCI)
- **Patterned surface anchoring of nematic droplets at miscible liquid-liquid interfaces**
Wang X., Zhou Y., Kim Y., Miller D. S. , Zhang R., Martinez-Gonzalez J. A. , BÜKÜŞOĞLU E., Zhang B., Brown T. M. , de Pablo J. J. , et al.
SOFT MATTER, vol.13, pp.5714-5723, 2017 (Journal Indexed in SCI)

- **A Practical Guide to the Preparation of Liquid Crystal-Templated Microparticles**
Wang X., BÜKÜŞOĞLU E., Abbott N. L.
CHEMISTRY OF MATERIALS, vol.29, pp.53-61, 2017 (Journal Indexed in SCI)
- **Synthesis of Optically Complex, Porous, and Anisometric Polymeric Microparticles by Templating from Liquid Crystalline Droplets**
Wang X., BÜKÜŞOĞLU E., Miller D. S. , Pantoja M. A. B. , Xiang J., Lavrentovich O. D. , Abbott N. L.
ADVANCED FUNCTIONAL MATERIALS, vol.26, pp.7343-7351, 2016 (Journal Indexed in SCI)
- **Structural Transitions in Cholesteric Liquid Crystal Droplets**
Zhou Y., BÜKÜŞOĞLU E., Martinez-Gonzalez J. A. , Rahimi M., Roberts T. F. , Zhang R., Wang X., Abbott N. L. , de Pablo J. J.
ACS NANO, vol.10, pp.6484-6490, 2016 (Journal Indexed in SCI)
- **Experimental Insights into the Nanostructure of the Cores of Topological Defects in Liquid Crystals**
Wang X., Kim Y., BÜKÜŞOĞLU E., Zhang B., Miller D. S. , Abbott N. L.
PHYSICAL REVIEW LETTERS, vol.116, 2016 (Journal Indexed in SCI)
- **Design of Responsive and Active (Soft) Materials Using Liquid Crystals**
BÜKÜŞOĞLU E., Pantoja M. B. , Mushenheim P. C. , Wang X., Abbott N. L.
ANNUAL REVIEW OF CHEMICAL AND BIOMOLECULAR ENGINEERING, VOL 7, vol.7, pp.163-196, 2016 (Journal Indexed in SCI)
- **Positioning colloids at the surfaces of cholesteric liquid crystal droplets**
BÜKÜŞOĞLU E., Wang X., Zhou Y., A. Martinez-Gonzalez J., Rahimi M., Wang Q., de Pablo J. J. , Abbott N. L.
SOFT MATTER, vol.12, pp.8781-8789, 2016 (Journal Indexed in SCI)
- **Topological defects in liquid crystals as templates for molecular self-assembly**
Wang X., Miller D. S. , BÜKÜŞOĞLU E., de Pablo J. J. , Abbott N. L.
NATURE MATERIALS, vol.15, pp.106-114, 2016 (Journal Indexed in SCI)
- **Stimuli-Responsive Cubosomes Formed from Blue Phase Liquid Crystals**
BÜKÜŞOĞLU E., Wang X., Martinez-Gonzalez J. A. , de Pablo J. J. , Abbott N. L.
ADVANCED MATERIALS, vol.27, pp.6892-6899, 2015 (Journal Indexed in SCI)
- **Blue-phase liquid crystal droplets**
Martinez-Gonzalez J. A. , Zhou Y., Rahimi M., BÜKÜŞOĞLU E., Abbott N. L. , de Pablo J. J.
PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, vol.112, pp.13195-13200, 2015 (Journal Indexed in SCI)
- **Nanoparticle self-assembly at the interface of liquid crystal droplets**
Rahimi M., Roberts T. F. , Armas-Pérez J. C. , Wang X., BÜKÜŞOĞLU E., Abbott N. L. , de Pablo J. J.
PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, vol.112, pp.5297-5302, 2015 (Journal Indexed in SCI)
- **Hierarchical Microstructures Formed by Bidisperse Colloidal Suspensions within Colloid-in-Liquid Crystal Gels**
Diestra-Cruz H., BÜKÜŞOĞLU E., Abbott N. L. , Acevedo A.
ACS APPLIED MATERIALS & INTERFACES, vol.7, pp.7153-7162, 2015 (Journal Indexed in SCI)
- **Colloid-in-liquid crystal gels formed via spinodal decomposition**
BÜKÜŞOĞLU E., Pal S. K. , de Pablo J. J. , Abbott N. L.
SOFT MATTER, vol.10, pp.1602-1610, 2014 (Journal Indexed in SCI)
- **Colloid-in-Liquid Crystal Gels that Respond to Biomolecular Interactions**
Agarwal A., Sidiq S., Setia S., BÜKÜŞOĞLU E., de Pablo J. J. , Pal S. K. , Abbott N. L.
SMALL, vol.9, pp.2785-2792, 2013 (Journal Indexed in SCI)

Refereed Congress / Symposium Publications in Proceedings

- **Synthesis of Liquid Crystal Templated Polymeric Microparticles Shaped by Microwells**
Kocaman C., Akdeniz B., Büküşoğlu E.
Eastern Mediterranean Chemical Engineering Conferences 9, Ankara, Turkey, 30 August - 01 September 2018, pp.1
- **Liquid Crystal-Templated Synthesis of Anisotropic Ultrafiltration Membranes**

Büküşođlu E., Karausta A.

Eastern Mediterranean Chemical Engineering Conference 9, Ankara, Turkey, 30 August - 01 September 2018, pp.1

- **Synthesis and Characterization of Micro Particles Templated from Cholesteric Liquid Crystal for Sensor Application**

Büküşođlu E., Avşar D. I.

Eastern Mediterranean Chemical Engineering Conference 9, Ankara, Turkey, 30 August - 01 September 2018, pp.1

- **Synthesis of 3D Chiral Microparticles from Nematic Liquid Crystal Templates**

Büküşođlu E., Akdeniz B.

Eastern Mediterranean Chemical Engineering Conference 9, Ankara, Turkey, 30 August - 01 September 2018, pp.1

- **Cholesteric Liquid Crystal Based Polymeric Sensors for Detection of Volatile Organic Compounds**

Batır Ö., Bat E., Büküşođlu E.

Eastern Mediterranean Chemical Engineering Conferences 9, Ankara, Turkey, 30 August - 01 September 2018, pp.1

- **Liquid Crystal-Templated Synthesis of Polymeric Films and their Potential Use in Chemical Processes**

Karausta A., Büküşođlu E.

27th International Liquid Crystal Conference, Kyoto, Japan, 22 - 28 July 2018

- **Synthesis of Optically Complex, Porous and Anisometric Polymeric Materials by Templating from Liquid Crystalline Media**

BÜKÜŞOĞLU E., Wang X., Abbott N. L.

Gordon Research Conferences on Liquid Crystals, 18 June 2017 - 23 June 2016

- **Triggered Release of Dispersed Microdroplets from Anisotropic Fluids**

Kim Y., Wang X., BÜKÜŞOĞLU E., Mondkar P., Abbott N. L.

APS March Meeting, 13 March 2017

Supported Projects

Büküşođlu E., TUBITAK Project, Liquid Crystal-Templated Synthesis of Polymeric Microparticles, Developing as Sensors and Investigating Their Potential for Drug Delivery Applications, 2018 - 2020

BÜKÜŞOĞLU E., AKDENİZ B., Project Supported by Higher Education Institutions, SMI KRİSTAL ŞABLONU KULLANARAK KOMPLEKS NANO YAPILI POLİMERİK MİKRO PARTİKÜLLERİN SENTEZİ, 2018 - 2019

BÜKÜŞOĞLU E., KARAUSTA A., Project Supported by Higher Education Institutions, SMI KRİSTAL ŞABLONU KULLANILARAK SENTEZLENMİŞ POLİMER- İNORGANİK KOMPOZİT MALZEMELERİN GAZ GEÇİRGENLİĞİNİN ÖLÇÜLMESİ, 2018 - 2019

BÜKÜŞOĞLU E., AKDENİZ B., KARAUSTA A., Project Supported by Higher Education Institutions, SMI Kristal Şablonlu Polimerik Malzemelerin Kimyasal Süreçlere Uygunluğunun Araştırılması, 2018 - 2019

Yılmaz L., BÜKÜŞOĞLU E., TUBITAK Project, SMI Kristal Şablonu Kullanarak Polimer-İnorganik Kompozit Malzemelerin Sentezi ve Karakterizasyonu, 2017 - 2018

Invited Congress and Symposium Activities

Eastern Mediterranean Chemical Engineering Conferences, Working Group, Ankara, Turkey, 2018

Eastern Mediterranean Chemical Engineering Conferences, Working Group, Ankara, Turkey, 2018

Eastern Mediterranean Chemical Engineering Conferences, Working Group, Ankara, Turkey, 2018

International Liquid Crystals Conference 2018, Working Group, Kyoto, Japan, 2018

Citations

Total Citations (WOS):447

h-index (WOS):12

Awards

Büküşođlu E., Bilim Akademisi Genç Biliminsanı Ödülü, Bilim Akademisi, April 2019