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Education Information

Doctorate, Rheinisch-Westfaelische Technische Hochschule Aachen, Germany 2010 - 2015

Postgraduate, Technische Universitaet Wien, Technische Chemie , Institute of Chemical, Environmental and Bioscience Engineering, Austria 2006 - 2007

Postgraduate, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Turkey 2006 - 2007

Undergraduate, Karadeniz Technical University, Turkey 2000 - 2005

Research Areas

Chemistry, Physical Chemistry

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Advances in Polymers of Intrinsic Microporosity (PIMs)-Based Materials for Membrane, Environmental, Catalysis, Sensing and Energy Applications**
Topuz F., Abdellah M. H., Budd P. M., Abdulhamid M. A.
Polymer Reviews, vol.64, no.1, pp.251-305, 2024 (SCI-Expanded)
- II. **Dialdehyde carbohydrates – Advanced functional materials for biomedical applications**
Falsafi S. R., Topuz F., Rostamabadi H.
Carbohydrate Polymers, vol.321, 2023 (SCI-Expanded)
- III. **Encapsulation of antioxidant beta-carotene by cyclodextrin complex electrospun nanofibers: Solubilization and stabilization of beta-carotene by cyclodextrins**
Yildiz Z. I., Topuz F., Kilic M. E., Durgun E., Uyar T.
Food Chemistry, vol.423, 2023 (SCI-Expanded)
- IV. **In-Situ and green photosynthesis of PVP-stabilized palladium nanoparticles as efficient catalysts for the reduction of 4-nitrophenol**
Ermis S., Kaya K., Topuz F., Yağcı Y.
Inorganic Chemistry Communications, vol.152, 2023 (SCI-Expanded)
- V. **Green Electrospinning of Biodegradable Cellulose Acetate Nanofibrous Membranes with Tunable Porosity**

Oldal D. G., Topuz F., Holtzl T., Szekely G.

ACS Sustainable Chemistry and Engineering, vol.11, no.3, pp.994-1005, 2023 (SCI-Expanded)

- VI. **Advances in the development of cyclodextrin-based nanogels/microgels for biomedical applications: Drug delivery and beyond**
Topuz F., Uyar T.
Carbohydrate Polymers, vol.297, 2022 (SCI-Expanded)
- VII. **Superoleophilic oil-adsorbing membranes based on porous and nonporous fluorinated polyimides for the rapid remediation of oil spills**
Topuz F., Abdulhamid M. A., Szekely G.
CHEMICAL ENGINEERING JOURNAL, vol.449, 2022 (SCI-Expanded)
- VIII. **Rapid Sublingual Delivery of Piroxicam from Electrospun Cyclodextrin Inclusion Complex Nanofibers**
Topuz F.
ACS OMEGA, vol.7, pp.35083-35091, 2022 (SCI-Expanded)
- IX. **Biobased thin-film composite membranes comprising priamine-genipin selective layer on nanofibrous biodegradable polylactic acid support for oil and solvent-resistant nanofiltration**
Yang C., Topuz F., Park S., Szekely G.
GREEN CHEMISTRY, vol.24, no.13, pp.5291-5303, 2022 (SCI-Expanded)
- X. **Valorization of Polyethylene Terephthalate (PET) Plastic Wastes as Nanofibrous Membranes for Oil Removal: Sustainable Solution for Plastic Waste and Oil Pollution**
Topuz F., Oldal D. G., Szekely G.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.61, no.25, pp.9077-9086, 2022 (SCI-Expanded)
- XI. **Nanofibrous membranes comprising intrinsically microporous polyimides with embedded metal-organic frameworks for capturing volatile organic compounds**
Topuz F., Abdulhamid M. A., Hardian R., Holtzl T., Szekely G.
JOURNAL OF HAZARDOUS MATERIALS, vol.424, 2022 (SCI-Expanded)
- XII. **Removal of polycyclic aromatic hydrocarbons (PAHs) from water through degradable polycaprolactone electrospun membrane**
Topuz F.
Turkish Journal of Chemistry, vol.46, no.6, pp.2080-2089, 2022 (SCI-Expanded)
- XIII. **Electrospun Adsorptive Nanofibrous Membranes from Ion Exchange Polymers to Snare Textile Dyes from Wastewater**
Cseri L., Topuz F., Abdulhamid M. A., Alammari A., Budd P. M., Szekely G.
ADVANCED MATERIALS TECHNOLOGIES, vol.6, no.10, 2021 (SCI-Expanded)
- XIV. **Scavenging organic micropollutants from water with nanofibrous hypercrosslinked cyclodextrin membranes derived from green resources**
Topuz F., Holtzl T., Szekely G.
CHEMICAL ENGINEERING JOURNAL, vol.419, 2021 (SCI-Expanded)
- XV. **Fast-dissolving antibacterial nanofibers of cyclodextrin/antibiotic inclusion complexes for oral drug delivery**
Topuz F., Kilic M. E., Durgun E., Szekely G.
JOURNAL OF COLLOID AND INTERFACE SCIENCE, vol.585, pp.184-194, 2021 (SCI-Expanded)
- XVI. **Nanofiber engineering of microporous polyimides through electrospinning: Influence of electrospinning parameters and salt addition**
Topuz F., Abdulhamid M. A., Holtzl T., Szekely G.
MATERIALS & DESIGN, vol.198, 2021 (SCI-Expanded)
- XVII. **Water-insoluble polymer-free uniform nanofibers of peracetylated cyclodextrin by electrospinning**
Topuz F., Shaikh A. Y., Guler M. O., Uyar T.
JOURNAL OF MATERIALS SCIENCE, vol.55, no.25, pp.11752-11762, 2020 (SCI-Expanded)
- XVIII. **Electrospinning Combined with Atomic Layer Deposition to Generate Applied Nanomaterials: A Review**
Vempati S., Ranjith K. S., Topuz F., Biyikli N., Uyar T.

ACS APPLIED NANO MATERIALS, vol.3, no.7, pp.6186-6209, 2020 (SCI-Expanded)

- XIX. **Electrospinning of Cyclodextrin Nanofibers: The Effect of Process Parameters**
Topuz F., Uyar T.
JOURNAL OF NANOMATERIALS, vol.2020, 2020 (SCI-Expanded)
- XX. **Hierarchically porous electrospun nanofibrous mats produced from intrinsically microporous fluorinated polyimide for the removal of oils and non-polar solvents**
Topuz F., Abdulhamid M. A., Nunes S. P., Szekely G.
ENVIRONMENTAL SCIENCE-NANO, vol.7, no.5, pp.1365-1372, 2020 (SCI-Expanded)
- XXI. **Antioxidant, antibacterial and antifungal electrospun nanofibers for food packaging applications**
Topuz F., Uyar T.
FOOD RESEARCH INTERNATIONAL, vol.130, 2020 (SCI-Expanded)
- XXII. **Atomic layer deposition of palladium nanoparticles on a functional electrospun poly-cyclodextrin nanoweb as a flexible and reusable heterogeneous nanocatalyst for the reduction of nitroaromatic compounds**
Topuz F., Uyar T.
NANOSCALE ADVANCES, vol.1, no.10, pp.4082-4089, 2019 (SCI-Expanded)
- XXIII. **Electrospinning of uniform nanofibers of Polymers of Intrinsic Microporosity (PIM-1): The influence of solution conductivity and relative humidity**
Topuz F., Satilmis B., Uyar T.
POLYMER, vol.178, 2019 (SCI-Expanded)
- XXIV. **RNA-mediated, green synthesis of palladium nanodendrites for catalytic reduction of nitroarenes**
Topuz F., Uyar T.
JOURNAL OF COLLOID AND INTERFACE SCIENCE, vol.544, pp.206-216, 2019 (SCI-Expanded)
- XXV. **Electrospinning of nanocomposite nanofibers from cyclodextrin and laponite**
Topuz F., Uyar T.
COMPOSITES COMMUNICATIONS, vol.12, pp.33-38, 2019 (SCI-Expanded)
- XXVI. **Efficient Removal of Polycyclic Aromatic Hydrocarbons and Heavy Metals from Water by Electrospun Nanofibrous Polycyclodextrin Membranes**
Celebioglu A., Topuz F., Yildiz Z. I., Uyar T.
ACS OMEGA, vol.4, no.4, pp.7850-7860, 2019 (SCI-Expanded)
- XXVII. **One-step green synthesis of antibacterial silver nanoparticles embedded in electrospun cyclodextrin nanofibers**
Celebioglu A., Topuz F., Yildiz Z. I., Uyar T.
CARBOHYDRATE POLYMERS, vol.207, pp.471-479, 2019 (SCI-Expanded)
- XXVIII. **Facile and green synthesis of palladium nanoparticles loaded into cyclodextrin nanofibers and their catalytic application in nitroarene hydrogenation**
Celebioglu A., Topuz F., Uyar T.
NEW JOURNAL OF CHEMISTRY, vol.43, no.7, pp.3146-3152, 2019 (SCI-Expanded)
- XXIX. **Water-Insoluble Hydrophilic Electrospun Fibrous Mat of Cyclodextrin-Epichlorohydrin Polymer as Highly Effective Sorbent**
Celebioglu A., Topuz F., Uyar T.
ACS APPLIED POLYMER MATERIALS, vol.1, no.1, pp.54-62, 2019 (SCI-Expanded)
- XXX. **Electrospinning of Cyclodextrin Functional Nanofibers for Drug Delivery Applications**
Topuz F., Uyar T.
PHARMACEUTICS, vol.11, no.1, 2019 (SCI-Expanded)
- XXXI. **Nanosilicate embedded agarose hydrogels with improved bioactivity**
Topuz F., Nadernezhad A., Caliskan O. S., Menciloglu Y. Z., Koc B.
CARBOHYDRATE POLYMERS, vol.201, pp.105-112, 2018 (SCI-Expanded)
- XXXII. **Influence of Hydrogen-Bonding Additives on Electrospinning of Cyclodextrin Nanofibers**
Topuz F., Uyar T.
ACS OMEGA, vol.3, no.12, pp.18311-18322, 2018 (SCI-Expanded)

- XXXIII. **Cyclodextrin-assisted synthesis of tailored mesoporous silica nanoparticles**
Topuz F., Uyar T.
BEILSTEIN JOURNAL OF NANOTECHNOLOGY, vol.9, pp.693-703, 2018 (SCI-Expanded)
- XXXIV. **Electrospinning of gelatin with tunable fiber morphology from round to flat/ribbon**
Topuz F., Uyar T.
MATERIALS SCIENCE & ENGINEERING C-MATERIALS FOR BIOLOGICAL APPLICATIONS, vol.80, pp.371-378, 2017 (SCI-Expanded)
- XXXV. **Poly-cyclodextrin cryogels with aligned porous structure for removal of polycyclic aromatic hydrocarbons (PAHs) from water**
Topuz F., Uyar T.
JOURNAL OF HAZARDOUS MATERIALS, vol.335, pp.108-116, 2017 (SCI-Expanded)
- XXXVI. **Cyclodextrin-functionalized mesostructured silica nanoparticles for removal of polycyclic aromatic hydrocarbons**
Topuz F., Uyar T.
JOURNAL OF COLLOID AND INTERFACE SCIENCE, vol.497, pp.233-241, 2017 (SCI-Expanded)
- XXXVII. **Pd nanocube decoration onto flexible nanofibrous mats of core-shell polymer-ZnO nanofibers for visible light photocatalysis**
Arslan O., Topuz F., Eren H., Biyikli N., Uyar T.
NEW JOURNAL OF CHEMISTRY, vol.41, no.10, pp.4145-4156, 2017 (SCI-Expanded)
- XXXVIII. **One-Step Fabrication of Biocompatible Multifaceted Nanocomposite Gels and Nanolayers**
Topuz F., Bartneck M., Pan Y., Tacke F.
BIOMACROMOLECULES, vol.18, no.2, pp.386-397, 2017 (SCI-Expanded)
- XXXIX. **DNA Nanogels To Snare Carcinogens: A Bioinspired Generic Approach with High Efficiency**
Topuz F., Singh S., Albrecht K., Moeller M., Groll J.
ANGEWANDTE CHEMIE-INTERNATIONAL EDITION, vol.55, no.40, pp.12210-12213, 2016 (SCI-Expanded)
- XL. **Molecular response of liver sinusoidal endothelial cells on hydrogels**
Bartneck M., Topuz F., Tag C. G., Sauer-Lehnen S., Warzecha K. T., Trautwein C., Weiskirchen R., Tacke F.
MATERIALS SCIENCE & ENGINEERING C-MATERIALS FOR BIOLOGICAL APPLICATIONS, vol.51, pp.64-72, 2015 (SCI-Expanded)
- XLI. **Covalently layer-by-layer assembled homogeneous nanolayers with switchable wettability**
Topuz F., Moeller M., Groll J.
POLYMER CHEMISTRY, vol.6, no.25, pp.4690-4697, 2015 (SCI-Expanded)
- XLII. **Stimuli-Sensitive Microgels from Native Elastin: An Easy Approach for a Drug Release System**
Singh S., Topuz F., Albrecht K., Groll J., Moeller M.
HIERARCHICAL MACROMOLECULAR STRUCTURES: 60 YEARS AFTER THE STAUDINGER NOBEL PRIZE II, vol.262, pp.415-430, 2013 (SCI-Expanded)
- XLIII. **Embedding of Active Proteins and Living Cells in Redox-Sensitive Hydrogels and Nanogels through Enzymatic Cross-Linking**
Singh S., Topuz F., Hahn K., Albrecht K., Groll J.
ANGEWANDTE CHEMIE-INTERNATIONAL EDITION, vol.52, no.10, pp.3000-3003, 2013 (SCI-Expanded)
- XLIV. **Hydrogels in sensing applications**
Buenger D., Topuz F., Groll J.
PROGRESS IN POLYMER SCIENCE, vol.37, no.12, pp.1678-1719, 2012 (SCI-Expanded)
- XLV. **Magnesium ions and alginate do form hydrogels: a rheological study**
Topuz F., Henke A., Richtering W., Groll J.
SOFT MATTER, vol.8, no.18, pp.4877-4881, 2012 (SCI-Expanded)
- XLVI. **Formation of Hydrogels by Simultaneous Denaturation and Cross-Linking of DNA**
TOPUZ F., Okay O.
BIOMACROMOLECULES, vol.10, no.9, pp.2652-2661, 2009 (SCI-Expanded)
- XLVII. **Chalcone 3-hydroxylation is not a general property of flavonoid 3'-hydroxylase**
Schlangen K., Miosic S., Topuz F., Muster G., Marosits T., Seitz C., Halbwirth H.

- PLANT SCIENCE, vol.177, no.2, pp.97-102, 2009 (SCI-Expanded)
- XLVIII. **Macroporous hydrogel beads of high toughness and superfast responsivity**
 TOPUZ F., Okay O.
 REACTIVE & FUNCTIONAL POLYMERS, vol.69, no.5, pp.273-280, 2009 (SCI-Expanded)
- XLIX. **Rheological Behavior of Responsive DNA Hydrogels**
 TOPUZ F., Okay O.
 MACROMOLECULES, vol.41, no.22, pp.8847-8854, 2008 (SCI-Expanded)

Articles Published in Other Journals

- I. **Green one-pot synthesis of bimetallic Pd-Pt nanosponges using biomolecules with enhanced catalytic activity for hydrogen evolution reactions**
 Topuz F., Patil B., Uyar T.
 Materials Advances, vol.4, 2023 (ESCI)
- II. **Catechin Encapsulated Antioxidant Electrospun Nanofibers: A Comparative Study between Cyclodextrin Complex Nanofibers and Poly(vinyl alcohol) Nanofibers**
 Yildiz Z. I., Topuz F., Uyar T.
 ACS Food Science and Technology, 2023 (Scopus)
- III. **Influence of salt addition on polymer-free electrospinning of cyclodextrin nanofibers**
 Topuz F., Celebioglu A., Aytac Z., Uyar T.
 NANO EXPRESS, vol.1, no.2, 2020 (ESCI)
- IV. **Nanocomposite Bioinks Based on Agarose and 2D Nanosilicates with Tunable Flow Properties and Bioactivity for 3D Bioprinting**
 Nadernezhad A., Caliskan O. S., Topuz F., Afghah F., Erman B., Koc B.
 ACS APPLIED BIO MATERIALS, vol.2, no.2, pp.796-806, 2019 (ESCI)

Refereed Congress / Symposium Publications in Proceedings

- I. **Electrospun nanofibrous poly-cyclodextrin membrane for efficient removal of polycyclic aromatic hydrocarbons (PAHs) and heavy metals from water**
 Celebioglu A., Topuz F., Yildiz Z., Uyar T.
 ACS Fall National Meeting and Exposition, California, United States Of America, 25 - 29 August 2019, vol.258
- II. **Biocompatible Mg-alginate hydrogels: A rheological study**
 Topuz F., Henke A., Richtering W., Möller M., Groll J.
 24th European Conference on Biomaterials, EBS 2011, Dublin, Ireland, 4 - 08 September 2011
- III. **Maleimide-functional sPEG surfaces for specific tethering of biomolecules**
 Topuz F., Möller M., Groll J.
 24th European Conference on Biomaterials, EBS 2011, Dublin, Ireland, 4 - 08 September 2011
- IV. **Breeding for yellow flower colour**
 Schlangen K., Halbwirth H., Topuz F., Miosic S., Seitz C., Stich K.
 13th European Congress on Biotechnology (ECB 13), Barcelona, Spain, 16 - 19 September 2007, vol.131

Metrics

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Awards

Topuz F., TÜBA-Üstün Başarılı Genç Bilim İnsanı Ödülleri (GEBİP), Türkiye Bilimler Akademisi, November 2023

Topuz F., ITU - Young Scientist Award, İstanbul Teknik Üniversitesi, January 2023

Topuz F., BAGEP-Outstanding Young Scientist Award given by Science Academy., Bilim Akademisi, March 2022