

AYŞE G. KARAKEÇİLİ, PhD

Resume

CONTACT INFORMATION:

Ankara University Chemical Engineering Dept.

Tandoğan 06100 Ankara, Turkey

+90 312 203 34 22

akarakecili@eng.ankara.edu.tr

aysekarakecili@yahoo.com

1. EDUCATION:

PhD., Chemical Engineering, Hacettepe University, **2006**

DESIGN, CHARACTERIZATION AND TISSUE ENGINEERING APPLICATIONS OF MICROPATTERNED BIOACTIVE MATERIALS

Supervisor: **Prof. Menemşe Gümüşderelioğlu**

MSc., Chemical Engineering, Hacettepe University, **1995**

INVESTIGATION OF BIOFILM FORMATION MECHANISMS ON POLYMERIC SURFACES AND MATERIAL DESIGN FOR BIOMEDICAL APPLICATIONS

Supervisor: **Prof. Menemşe Gümüşderelioğlu**

BSc., Chemical Engineering, Hacettepe University

2. ACADEMIC POSITIONS:

Current Position Associate Prof., Chemical Engineering, **Ankara University**.

2014-2015 Visiting Researcher, Biomedical Engineering, **Columbia University**,

2010-2013 Assistant Prof., Chemical Engineering, **Ankara University**.

2000-2006 Research Assistant, Chemical Engineering, **Hacettepe University**

2004-2005 Visiting Researcher, **Universita Degli Studi di Catania**, Italy.

3. AWARDS AND FELLOWSHIPS:

2014 TÜBİTAK, Post-Doctoral Research Fellowship

2007 TÜBİTAK, Research Fellowship

2005 Consorzio Interuniversitario per i Sistemi a Grande Interfaccia (CSGI)

2004 L'OREAL-UNESCO 'For Women in Science' Award.

4. RESEARCH INTEREST

Biomaterials Science and Engineering

Polymer Technology

Micro/nanofabrication Techniques

Tissue Engineering

5. RESEARCH EXPERIENCE: (As Project Manager only)

Development of Biomimetic Gradient Scaffolds for Osteochondral Tissue Regeneration, Granted by: **Turkish Scientific Research Council** (Project No: 116M437) continuing.

Fabrication and Characterization of Graphene Oxide Modified Nanocomposite Tissue Scaffolds Using Supercritical Carbondioxide, Granted by: **Ankara University BAP** (Project No: 16L0443003) 2016.

Development of Infection Resistant and Bioactive Materials by Using Antimicrobial Peptides and Growth Factors,Granted by: **Turkish Scientific Research Council** (Project No: 111M640) 2014.

Sequential Release of Growth Factors from Chitosan Scaffolds for Periodontal Tissue Engineering Applications,Granted by: **Ankara University BAP** (Project No: 11B4343006) 2014.

Design and characterization of functionally graded tri-phase membranes prepared by salt-leaching/electrospinning for periodontal regeneration, Granted by: **Ankara University BAP** (Project No: 13H4343003) 2014.

Investigation of Cellular Activity on Nanopatterned Chitosan Membranes via Electrospinning **Turkish Scientific Research Council** (Project No: 110M381) 2010.

6. PUBLICATIONS:

1. Yıldırım, S., Demirtaş, T.T., Dinçer, C.A., Yıldız, N., **Karakeçili, A.**, Preparation of polycaprolactone/graphene oxide scaffolds: A green route combining supercritical CO₂ technology and porogen leaching, *Journal of Supercritical Fluids* (133), 156-162, 2018.
2. Dinçer, C.A., Yıldız, N., **Karakeçili, A.**, Aydoğan, N., Çalimli, A., Synthesis and Characterization of Fe₃O₄-MPTMS PLGA nanocomposites for anticancer drug loading and release studies, *Artificial Cells, Nanomedicine and Biotechnology*, DOI: 10.1080/21691401.2016.1243546
3. Eroğlu, A., Aydın, R.S.T, **Karakeçili, A.**, Çalimli, A., Fabrication and Process Optimization of PHEMA nanofibers by Response Surface Methodology, *Journal of Nanoscience and Nanotechnology* (16), 1-10, 2016.
4. Aydın, R.S.T, Eroğlu, A., **Karakeçili, A.**, Çalimli, A., Designing Double-layered Nanofibrous Membranes as a Wound Dressing Material, *Fibers and Polymers* (17) 1765-1775, 2016.
5. Gürbüz, S., Demirtaş, T.T., Yüksel, E., **Karakeçili, A.**, Doğan, A., Gümüşderelioğlu, M., Multi-layered Functional Membranes for Periodontal Regeneration:Preparation and Characterization, *Materials Letters* (178), 256-259, 2016.
6. Demirtaş, T.T., Göz, E., **Karakeçili, A.**, Gümüşderelioğlu, M., Combined Delivery of PDGF-BB and BMP 6 for Enhanced Osteoblastic Differentiation, *Journal of Materials Science:Materials in Medicine* (27), 12, 2016.
7. Yüksel, E., **Karakeçili, A.**, Demirtaş, T.T., Gümüşderelioğlu, M., Preparation of Bioactive and Antimicrobial PLGA Membranes by Magainin II/EGF Functionalization, *International Journal of Biological Macromolecules* (86), 162-168, 2016.
8. **Karakeçili, A.**, Messina, G. M. L., Yurtsever, M. Ç., Gümüşderelioğlu, M., Marletta, G., Impact of Selective Fibronectin Nanoconfinement on Human Dental Pulp Stem Cells, *Colloids and Surfaces B: Biointerfaces* (123), 1, 39-48, 2014.
9. Yüksel, E., **Karakeçili, A.**, Antibacterial Activity on Electrospun Poly(lactide-co-glycolide) Based Membranes via Magainin II Grafting, *Materials Science and Engineering C* (45), 510-518, 2014.
10. Göz E., **Karakeçili, A.**, Effect of Emulsification-Diffusion Parameters on Formation of Poly (3-hydroxybutyrate-co-3-hydroxyvalerate) Particles, *Artificial Cells, Nanomedicine and Biotechnology*, DOI: 10.3109/21691401.2014.937869.
11. **Karakeçili, A.**, Arıkan, A., Preparation of Chitosan-nanohydroxyapatite Composite Scaffolds by a Supercritical CO₂ Assisted Process, *Polymer Composites*, DOI 10.1002/pc.22253
12. Şimşek, M., Çapkın, M., **Karakeçili, A.**, Gümüşderelioğlu, M., Chitosan and PCL Membranes Patterned via Electrospinning:Effect of Underlying Chemistry and Pattern Characteristics on Epithelial/Fibroblastic Cell Behavior, *Journal of Biomedical Materials Research: Part A*, DOI: 10.1002/jbm.a.34287
13. Gümüşderelioğlu, M., **Karakeçili, A.**, Demirtaş, T.T., Osteogenic Activities of MC3T3-E1 Cells on Heparin-immobilized Poly(caprolactone) Membranes, *Journal of Bioactive and Compatible Polymers* (26), 3, 257-269, 2011.

- 14. Karakeçili A. G.,** Satriano C., Gümüşderelioğlu M., Marletta, G., Thermoresponsive and bioactive poly(vinyl ether)-based hydrogels synthesized by radiation copolymerization and photochemical immobilization, *Radiation Physics and Chemistry* (77), 154-161, 2008.
15. Demirtaş, T. T., **Karakeçili, A. G.,** Gümüşderelioğlu, M., Hydroxyapatite Containing Superporous Hydrogel Composites: synthesis and in-vitro characterization, *Journal of Materials Science: Materials in Medicine*, (19), 729-735, 2008.
- 16. Karakeçili, A. G.,** Gümüşderelioğlu, M., Physicochemical and Thermodynamic Aspects of Fibroblastic Attachment on RGDS-modified Chitosan Membranes, *Colloids and Surfaces B: Biointerfaces*, (61), 216-223, 2008.
- 17. Karakeçili A. G.,** Satriano C., Gümüşderelioğlu M., Marletta, G., Enhancement of the Fibroblastic proliferation on chitosan surfaces by immobilized epidermal growth factor, *Acta Biomaterialia*, (4), 989-996, 2008.
- 18. Karakeçili A. G.,** Demirtaş T. T., Satriano C., Gümüşderelioğlu M., Marletta, G., Evaluation of L929 Fibroblast Attachment and Proliferation on RGDS Immobilized Chitosan in Serum-containing/Serum-free Cultures, *Journal of Bioscience and Bioengineering*, (104), 69-77, 2007.
19. Tıǧlı S., **Karakeçili, A. G.,** Gümüşderelioğlu, M., In vitro Characterization of Chitosan Scaffolds: Influence of Composition and Deacetylation Degree, *Journal of Materials Science: Materials in Medicine*, (18), 1665-1674, 2007.
- 20. Karakeçili A. G.,** Satriano C., Gümüşderelioğlu M., Marletta, G., Surface Characteristics of Ionically Crosslinked Chitosan Membranes, *Journal of Applied Polymer Science*, (106), 3884-3888, 2007.
- 21. Karakeçili A. G.,** Satriano C., Gümüşderelioğlu M., Marletta, G., Relationship Between The Fibroblastic Behavior and Surface Properties of RGD-immobilized PCL Membranes, *Journal of Materials Science: Materials in Medicine*, (18), 317-319, 2007.
22. Gümüşderelioğlu, M., Müftüoğlu, O., **Karakeçili, G. A.,** Biomodification of Thermosensitive Copolymer of Ethylene Glycol Vinyl Ether by RGD and Insulin. *Reactive and Functional Polymers*, 58 (2), 149-156, 2004.
23. Gümüşderelioğlu, M., **Karakeçili, G. A.,** Uses of Thermoresponsive and RGD/Insulin Modified Poly(Vinyl-Ether)-Based Hydrogels in Cell Cultures. *Journal of Biomaterials Science Polymer Edn.*, 14(3), 199-211, 2003.
- 24. Karakeçili, G. A.,** Gümüşderelioğlu, M., Comparison of Bacterial Adhesion and Animal Cell Initial Adhesion on Hydrophilic/Hydrophilic Biomaterials. *Journal of Biomaterials Science Polymer Edn.*, 13(2), 185-196, 2002.

7. SELECTED CONFERENCE PROCEEDINGS AND PRESENTATIONS :

BIOMED 2017

Ulusal Kimya Müh Kongresi 2016

WBC2016, World Biomaterials Congress. Dual Functional Biodegradable Membrane: A Combined Approach for Enhanced Tissue Integration and Antibacterial Properties, May 2016, Montreal, Canada (oral presentation).

ISN²A 2014, 1st International Symposium on Nanoparticles/Nanomaterials and Applications. 'Fabrication of Chitosan/Nanohydroxyapatite Composite Scaffolds for Tissue Engineering Applications', January 2014, Portugal (oral presentation).

BIOMED 2011, 17th International Symposium on Biomedical Science and Technology. Cell-Material Interactions on Patterned Chitosan and PCL Surfaces. Ankara University, November 2011, Ankara (oral presentation).

ESB 2011, 24th European Conference on Biomaterials. Surface Modification of Polycaprolactone Membrane via Heparin for Osteogenic Differentiation of MC3T3-E1 Cells. Dublin, Ireland, November 2011.

I. Stem Cell Course and V. Stem Cell Symposium, Hacettepe University, Ankara. June 2010.

BIOMED 2007, Physico-chemical aspects of fibroblastic adhesion on RGDS immobilized chitosan membranes. Yeditepe University, İstanbul, August 2007 (oral presentation).

ESB 2006, Relationship Between the Fibroblastic Behavior and Surface Properties of RGD-immobilized PCL Membranes European Society For Biomaterials, September 2006, Nantes, France (oral presentation).

5th Advanced Course on Cell-Material Interactions, University of Porto, Portugal, July 2004 (poster and oral presentation).

The Leonardo Project-TO INNOEN, Ankara University, Ankara, June 2010.

8. TEACHING EXPERIENCE:

ANKARA UNIVERSITY, CHEMICAL ENGINEERING DEPARTMENT

CHE 212 FLUID MECHANICS, Supervisor

CHE 205 MASS and ENERGY BALANCES, Supervisor

CHE 349 BIOMATERIALS, Supervisor

KYM 312 MASS TRANSFER OPERATIONS, Supervisor

9. MENTORING EXPERIENCE:

ANKARA UNIVERSITY, CHEMICAL ENGINEERING DEPARTMENT

Emre Yüksel (2011-2014) – MSc. student

Thesis: Development of Infection Resistant Biomaterials by Using Antimicrobial Peptides

Eda Semizer (2011-2014) – PhD. Student

Thesis: Preparation of Chitosan Scaffolds with Sequential Delivery of Growth Factors for Bone Tissue Engineering Applications

Ayşegül Arıkan (2010-1012) – MSc. Student

Thesis: Preparation and Characterization of Scaffolds by Using a Supercritical CO₂ Assisted Process