

Gizem BULDUM, PhD



Assistant Professor

Marmara University, Faculty of Engineering,

Department of Bioengineering

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EDUCATION

- 2011 – 2016** **PhD, Imperial College London, UK**
Chemical Engineering
Biological Systems Engineering Group
Title of Thesis: “Bacterial cellulose production in genetically modified *Escherichia coli*”
- 2009 – 2011** **MSc, Marmara University, Istanbul, Turkey**
Bioengineering
Title of Thesis: “Investigation of penetration of inhibitor peptides into cells and their effects on intracellular enzymes with experimental methods”
- 2005 – 2009** **BSc, Marmara University, Istanbul, Turkey**
Chemical Engineering

EMPLOYMENT

- 2017-** : Assistant Professor, Marmara University, Department of Bioengineering.
- 2016 - 2017:** Research Assistant, Namık Kemal University, Department of Chemistry.
- 2011 - 2016:** Research Fellow, Imperial College London, Department of Chemical Engineering.

RESEARCH INTERESTS

- Microbial cell cultures
- Synthetic biology
- Bioprocess engineering

- Biomaterials
- Recombinant DNA technology
- Protein-overexpression

TEACHING EXPERIENCES

- Bioengineering Principles, Marmara University, Fall 2017.
- Biochemistry Laboratory II, Namık Kemal University, Spring 2017.
- Chemistry II, Namık Kemal University, Spring 2017.
- Biochemistry Laboratory I, Namık Kemal University, Fall 2016.
- 2nd year Knowledge Laboratory, Imperial College London, Department of Chemical Engineering, Spring 2015.
- Thermodynamics II, Imperial College London, Department of Chemical Engineering, Spring 2014.
- Graduation Project Supervision, Erasmus Program, Imperial College London, Department of Chemical Engineering, Summer 2014.
- Thermodynamics I, Imperial College London, Department of Chemical Engineering, Fall 2013.

AWARDS and FUNDINGS

- The Graduate Studies Support Programme by Ministry of National Education of Turkey, PhD Fellowship (2011-2016).
- TUBITAK 1001, Scientific and Technological Research Projects Support Program: ‘Investigation of Penetration of Inhibitor Peptides into Cells and Their Effects of Intracellular Enzymes with Computational and Experimental Methods’, Research Fellow, (2009-2011).
- Scientific Research Projects Support Program, BAPKO Type A. MSc Project Financial Support, Research Fellow, (2009-2010).
- TUBITAK 2209, Domestic / International University Students Research Project Support Program, ‘Thermal inactivation kinetics of *Bacillus licheniformis* BA17 alkaline proteases in the presence of metal ions and organic solvents’, Principal Investigator, (2008-2009).

CONFERENCE PRESENTATIONS

- Synthetic Biology: Engineering, Evolution & Design (SEED), Boston, 2015: “Cellulose Production in *Escherichia coli*.”

- RTM 2015 (Recent Technologies in Microbiology), Birmingham, 2015: “Bacterial Cellulose Production in Genetically Modified *Escherichia coli*.”
- 17th International Conference on Chemical and Biochemical Engineering, Paris, 2015: “Design of a Recombinant Expression System for Bacterial Cellulose Production”.
- 36th FEBS Congress, Torino, 2011: “Investigation of in vivo inhibition potential of β - lactamase and BLIP.”
- 9th Chemical Engineering Congress (UKMK), Ankara, 2010: “Investigation of TEM-1 Beta-Laktamase Ligand Interaction.”
- XXI. Biochemistry Congress, Istanbul, 2009: “Research of thermal inactivation of *Bacillus licheniformis* BA17 alkaline proteases in the presence of metal ions and research of inactivation kinetics of proteases in organic solvents.”

PUBLICATIONS

- Gizem Buldum, Alexander Bismarck, Athanasios Mantalaris : “Recombinant biosynthesis of bacterial cellulose in genetically modified *Escherichia coli*.” *Bioprocess and Biosystems Engineering* (2017).
- Nilay Büdeyri Gökgöz, Simay Yalaz, Naze Gül Avcı, Gizem Buldum, Elif Özkırımlı Ölmez, Berna Sarıyar Akbulut: “Investigation of the in vivo interaction between β -lactamase and its inhibitor protein.” *Turk J Biol.*(2015);39.
- Koon-Yang Lee, Gizem Buldum, Athanasios Mantalaris, Alexander Bismarck (2014) More Than Meets the Eye in Bacterial Cellulose: “Biosynthesis, Bioprocessing, and Applications in Advanced Fiber Composites.” *Macromolecular Bioscience* (2014), 14(1).