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Assistant professor of chemical engineering

Biotechnology department, Faculty of chemical engineering, Tarbiat Modares university

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### **Education**

B.Sc. Ferdowsi University of Mashhad 2000-2004

M.Sc. Iran University of Science and Technology 2004-2006

Ph.D. Iran University of Science and Technology 2006-2011

Dissertation title: Investigation on growth and product formation by *Bacillus subtilis* using a metabolic model

### **Positions and Employment**

Postdoctoral Research Fellow, Pasteur Institute of Iran, 2011-2012

Assistant Professor, Tarbiat Modares University, 2012-present

### **Courses Taught**

Systems metabolic engineering

Biochemistry

Molecular genetics

### **Research Interest**

Reconstruction of metabolic networks

Systems metabolic engineering of microbial cell factories

Omics data integration

Biomedical applications of metabolic modeling

Multi-scale modeling and microbial communities

## Publications

### Journal Papers

Motamedian, E., Mohammadi, M., Shojaosadati, S. A., Heydari, M. (2017) TRFBA: an algorithm to integrate genome-scale metabolic and transcriptional regulatory networks with incorporation of expression data, *Bioinformatics*. btw772.

Jamialahmadi, O., Motamedian, E. and Hashemi-Najafabadi, S. (2016) BiKEGG: a COBRA toolbox extension for bridging the BiGG and KEGG databases, *Molecular BioSystems*, **12**, 3459-3466.

Motamedian, E., Saeidi, M. and Shojaosadati, S. (2016) Reconstruction of a charge balanced genome-scale metabolic model to study the energy-uncoupled growth of *Zymomonas mobilis* ZM1, *Molecular BioSystems*, **12**, 1241-1249.

Motamedian, E., Ghavami, G. and Sardari, S. (2015) Investigation on metabolism of cisplatin resistant ovarian cancer using a genome scale metabolic model and microarray data, *Iranian journal of basic medical sciences*, **18**, 267.

rani, Z.A., Maghsoudi, A., Shojaosadati, S.A. and Motamedian, E. (2015) Development and *in silico* analysis of a new nitrogen-limited feeding strategy for fed-batch cultures of *Pichia pastoris* based on a simple pH-control system, *Biochemical Engineering Journal*, **98**, 1-9.

Motamedian, E. (2015) A new algorithm to find all alternate optimal flux distributions of a metabolic network, *Computers & Chemical Engineering*, **73**, 64-69.

Motamedian, E. and Naeimpoor, F. (2011) Prediction of proton exchange and bacterial growth on various substrates using constraint-based modeling approach, *Biotechnology and Bioprocess Engineering*, **16**, 875-884.

Motamedian, E. and Naeimpoor, F. (2011) Flux distribution in *Bacillus subtilis*: inspection on plurality of optimal solutions, *Iranian journal of biotechnology*, **9**, 260-266.

### Conference Papers

Elham Taheri, Ehsan Motamedian, Fatemeh Bagheri (2015), A Bi-Level Integration Algorithm for Simultaneous Modeling of Multiple Cells, 4th Conference on Constraint-Based Reconstruction and Analysis (COBRA 2015), Heidelberg, Germany.

Maryam Mohammadi, Ehsan Motamedian, Seyed Abbas Shojaosadati (2015), Integration of Metabolic and Regulatory Networks with Incorporating Gene Expression Data, 16th International Conference on Systems Biology (ICSB 2015), Singapore.

Elham Taheri, Ehsan Motamedian, Fatemeh Bagheri (2015), Finding essential genes for proliferation of cancer cell by integration of transcription data into a human metabolic model, 16th International Conference on Systems Biology (ICSB 2015), Singapore.

Mona Heydari, Ehsan Motamedian, Seyed Abbas Shojaosadati (2014), Integration of Microarray Data into a Genome-Scale Metabolic Model to Study Flux Distribution after Gene Knockout, International Science Index Vol: 8 No: 11 Part XVII, Istanbul, Turkey.

Maryam Saeidi, Ehsan Motamedian, Seyed Abbas Shojaosadati (2014), Reconstruction of a Genome-Scale Metabolic Model to Simulate Uncoupled Growth of *Zymomonas mobilis*, International Science Index Vol: 8 No: 11 Part XVII, Istanbul, Turkey.

Ehsan Motamedian (2014), Effect of Variable Fluxes on Optimal Flux Distribution in a Metabolic Network, International Science Index Vol: 8 No: 11 Part XVII, Istanbul, Turkey.

Ehsan Motamedian, Fereshteh Naeimpoor (2010), Comparison of *Bacillus subtilis* Growth on Different Nitrogen Sources using Flux Balance Analysis. 13th Iranian National Chemical Engineering Congress & 1st International Regional Chemical and Petroleum Engineering, Kermanshah, Iran, October 25-28.