

## Shohreh Ariaeenejad, Ph.D.

Assistant professor  
Department of Systems and Synthetic Biology.  
Agricultural Biotechnology Research Institute of Iran (ABRII)

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Google Scholar: <https://scholar.google.com/citations?user=6tYGuFQAAAAJ&hl=en>

### Date and place of birth

April. 22, 1977 in Tehran, Iran

### Education

I got my PhD in biology (2012) in which I was involved in comprehensive research on structural analysis and characterization of globin proteins in IBB.

I have B.Sc and M.Sc degrees in chemistry and during this period, my investigation was focused on extraction and Identification of Natural Occurring Compounds.

### Positions

Assistant professor	Department of Systems and Synthetic Biology., Agricultural Biotechnology Research Institute of Iran (ABRII)	2016 until now
Postdoctoral fellow	<i>Awarding entity:</i> The Allameh Tabatabaei award of Iran's National Elites Foundation (INEF) <i>Entity where activity was carried out:</i> Biophysical Chemistry Lab., Institute of Biochemistry and Biophysics (IBB), University of Tehran	2012-2014
Postdoctoral fellow	<i>Awarding entity:</i> The Allameh Tabatabaei award of Iran's National Elites Foundation (INEF) <i>Entity where activity was carried out:</i> Biotechnology Lab., Department of Biotechnology, Faculty of Science, University of Tehran	2014-2015

## Research Interests

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- Screening of metagenomic data to discover novel stable enzymes
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- Characterization of novel enzymes like protease, lipase, xylanase, cellulase, laccase, etc.
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- Application of protein engineering to improve catalytic activity of enzymes
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- Enzyme immobilization
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- Computational analysis of structure-function relationship of proteins/enzymes
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## Distinctions and Awards

Distinguished researcher award from the Alborz Research and Technology Festival	2022
Distinguished faculty member of the Agricultural Biotechnology Research Institute of Iran (ABRII)	2020
Best Innovative Idea Award at “The first event of the leading scientific discourse (gap): Women's ideas and experiences in science and technology”, Iranian National Commission for UNESCO	2020
National Institutes of Health (NIH) (NIHMS483589, Publ.ID: BIOMAC3424)	2013
The Top Student with 1st rank in MSc. Degree	2006

## International projects

Metagenomic Enzyme Discovery Project (MEDP)	2018-2022
A collaborative international project including scientists from Iran, Australia, United States, Japan, and India.	
Mechanistic study of natural antioxidants (NAOs) on inhibiting the formation of free radicals and their impacts on oxidative stress-related diseases (OSRD)	2021-2026
A collaborative international project including scientists from the University of Tehran in Iran and Henan University in China	

## Skills and Expertise

- **Computer Skills**

Biotechnology and Bioinformatics Software tools (Geneious, CLC Main Workbench, DNA Dragon, Gene Runner, Sequencher, Mega, ...), Metagenomics tool, online Biotechnology and Bioinformatics services, Online Biological Databases (PDB, NCBI, Ensemble, ...), Chemical Analysis Software tools (Chem Draw, Gaussian, Hyperchem).

- **Molecular Biology and Biotechnology skills**

PCR, cDNA, Primer design, Genomic DNA extraction/ Quality and quantity evaluation, Sequencing and results analysis, DNA and RNA and related molecular biology skills.

- **Protein purification**

- Protein isolation by size and Ion exchange chromatography.
- Protein and enzyme biochemical characterization.
- Structural studies using fluorescence spectrophotometry, UV-vis spectrophotometry, on circular dichroism analysis (CD) investigation, the percentage of alpha-helix and beta-sheet substructures has been measured, Differential scanning calorimetry (DSC) showed varying thermal unfolding characteristics.
- Protein crystallography.

- **Electrophoresis and related methods**

Protein Electrophoresis: Agarose and polyacrylamide gel electrophoresis, isoelectric focusing (IEF), Agarose and polyacrylamide gel electrophoresis (SDS-PAGE) and cellulose acetate electrophoresis methods, isoelectric focusing (IEF) methods.

## Invited Speaker presentation selection

<b>Application of metagenomics in enzymology</b>	1st international and 10th national Iranian Conference on Bioinformatics 2022, Invited speaker
<b>Potential of a novel metagenome-derived laccase with stable performance in biorefinery of lignocellulosic biomass</b>	12st international and 4th national Iranian Conference on Bioinformatics 2021, Invited speaker
<b>Machine learning assisted tools aimed at temperature and pH optima classification of celluloses from high-throughput data</b>	9th Iranian Conference on Bioinformatics 2020, Invited speaker

<b>In silico screening of GH11 xylanases for mining thermostable xylanase</b>	8th Iranian Conference on Bioinformatics 2019, Invited speaker
<b>Extraction of highly thermostable glucosidase hydrolase recombinant enzymes from camel rumen microbiota</b>	3th conference on protein and peptide sciences2018, Invited speaker
<b>Predicting Enzyme Activity Using Statistical Learning Based on Sequence Information</b>	Agricultural Biotechnology in the XXI Century 2017, Invited speaker
<b>Efficient regeneration of two Persian maize (<i>Zea mays</i> L.) genotypes from shoot apex explants</b>	The Korean Society for Biochemistry and Molecular Biology (KSBMB) International Conference 2016, Invited speaker
<b>Study of <i>A.persicus</i> and <i>A.stellatus</i> hemoglobins: Biochemical Characterization to Globin Gene and Protein Sequencing</b>	Iran Society of Biophysical Chemistry (ISOBC) 2011, Invited speaker
<b>A hypothetical evolutionary relationship between the phylogeny position and the hydrophobic properties of fish's hemoglobin</b>	14 <sup>th</sup> Conference on biophysical chemistry, presentation, University of Zabol
<b>Biophysical Study of Functional Characteristics of Hemoglobin Components from Caspian Sea Sturgeons (<i>Acipenser Persicus</i> and <i>Acipenser Stellatus</i>) Blood</b>	92nd Annual Meeting of the AAAS Pacific Division 2011, Invited speaker

## Publications:

### Journal publications

\* corresponding or co-corresponding author

<b>Precision enzyme discovery through targeted mining of metagenomic data</b> Shohreh Ariaeenejad, Javad Gharechahi, Mehdi Foroozandeh Shahraki, Fereshteh Fallah Atanaki, Jian-Lin Han, Xue-Zhi Ding, Falk Hildebrand, Mohammad Bahram, Kaveh Kavousi, Ghasem Hosseini Salekdeh	<b>Natural Products and Bioprospecting</b>  <b>14(7), (2024)</b>
<b>Lactic acid production enhancement using metagenome-derived bifunctional enzyme immobilized on chitosan-alginate/nanocellulose hydrogel</b> Sahar Hedaiatnia, Shohreh Ariaeenejad, Hassan Hassani Kumleh, Hossein Hadavand Mirzaei, Fateh Shakeri, Elaheh Motamedi	<b>Bioresource Technology Reports</b>  <b>25(101749), (2024)</b>

**Performance improvement of metagenomic laccase immobilized on nanocellulose-reinforced hydrogel nanocomposites for enhanced delignification and detoxification**

Sanaz Najafvand, Elaheh Motamedi, Marzieh Ghollasi, Saeed Irian, [Shohreh Ariaeenejad\\*](#)

Industrial Crops and Products

208(117840), (2024)

**Biocatalytic decolorization of azo dye-containing wastewater by immobilizing metagenome-derived laccase on green synthesized Co-doped NiO NPs**

[Shohreh Ariaeenejad\\*](#), Mahmood Barani, Mina Sarani, Azadeh Lohrasbi-Nejad, Ghasem Mohammadi-Nejad, Ghasem Hosseini Salekdeh

Process Safety and Environmental Protection

179 (57-67), (2023)

**Computational Insights into the Selecting Mechanism of  $\alpha$ -Amylase Immobilized on Cellulose Nanocrystals: Unveiling the Potential of  $\alpha$ -Amylases Immobilized for Efficient Poultry**

[Shohreh Ariaeenejad\\*](#), Seyedeh Fatemeh Sadeghian Motahar, Fereshteh Noroozi Tiyoula, Elaheh Motamedi, Mehrshad Zeinalabedini, Kaveh Kavousi\*

ACS Bioconjugate Chemistry

12 (14), (2023)

**A metagenomic catalog for exploring the plastizymes landscape covering taxa, genes, and proteins**

Donya Afshar Jahanshahi, [Shohreh Ariaeenejad](#), Kaveh Kavousi

Scientific Reports

13 (16029), (2023)

**Effects of agro-waste resources on characteristics of Fe/nanocellulose hybrids and their applications as novel Fenton-like catalysts in dye removal from wastewater**

[Shohreh Ariaeenejad](#), Elaheh Motamedi, Mahyar Ramezani Tazehabad

Process Safety and Environmental Protection

176 (918-933), (2023)

**Improved saccharification of rice straw by removing phenolic compounds using a stable immobilized metagenome-derived laccase on sodium alginate-based hydrogel**

[Shohreh Ariaeenejad](#), Elaheh Motamedi

Biochemical Engineering Journal

109021, (2023)

**Lignocellulose degradation by rumen bacterial communities: New insights from metagenome analyses**

Gharechahi J., Vahidi M.F., Sharifi G., [Ariaeenejad S.](#), Ding X, Han J., Hosseini Salekdeh Gh

Environmental Research,  
115925, (2023)

**Efficiency of an alkaline, thermostable, detergent compatible and organic solvent tolerant lipase with hydrolytic potential in biotreatment of wastewater**

[Ariaeenejad S.](#)\*, Kavousi K., Han JL., Ding XZ., Salekdeh GH.

Science of The Total Environment,  
161066, (2023)

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**Efficient bioconversion of lignocellulosic waste by a novel computationally screened hyperthermostable enzyme from a specialized microbiota**

**Ecotoxicology and environmental safety  
114587, (2023)**

Ariaeenejad S.\*, Kavousi K., Zolfaghari B., Roy S, Koshiba T, Hosseini Salekdeh Gh.

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**Simultaneous hydrolysis of various protein-rich industrial wastes by a naturally evolved protease from tannery wastewater microbiota**

**Science of The Total Environment,  
152796, (2022)**

Ariaeenejad S.\*, Kavousi K., Abdollahzadeh Mamaghani A.S., Ghasemitabesh R., Hosseini Salekdeh Gh.,

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**Enzymatically triggered delignification through a novel stable laccase: A mixed in-silico/in-vitro exploration of a complex environmental microbiota**

**International Journal of Biological  
Macromolecules,**

**328-341, (2022)**

Ariaeenejad S.\*, Kavousi K., Afshar Jahanshahi D, Abdollahzadeh Mamaghani A.S., Ghasemitabesh R., Moosavi-Movahedi, A.A, Hosseini Salekdeh Gh.,

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**Highly efficient removal of dyes from wastewater using nanocellulose from quinoa husk as a carrier for immobilization of laccase**

**Bioresource Technology, 126833,  
(2022)**

Ariaeenejad S.\*, Motamedi E., Hosseini Salekdeh Gh.,

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**Enhancing the ethanol production by exploiting a novel metagenomic-derived bifunctional xylanase/ $\beta$ -glucosidase enzyme with improved  $\beta$ -glucosidase activity by a nanocellulose carrier**

**Frontiers in microbiology, 13:  
1056364, (2022)**

Ariaeenejad S.\*, Motamedi E., Kavousi K., Ghasemitabesh R., Goudarzi R., Zolfaghari B., Roy S, Hosseini Salekdeh Gh.

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**Synthesis of two novel bio-based hydrogels using sodium alginate and chitosan and their proficiency in physical immobilization of enzymes**

**Scientific Reports, 12, 1-14, (2022)**

Shakeri F., Ariaeenejad S., Ghollasi M., Motamedi E

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**In vitro bioprocessing of corn as poultry feed additive by the influence of carbohydrate hydrolyzing metagenome derived enzyme cocktail**

Scientific Reports, 12, 1-14 (2022)

Mousavi S.H., Sadeghian Motahar S.F., Salami M., Kavousi K., Sheykh Abdollahzadeh Mamaghani A., **Ariaeenejad S.\***, Hosseini Salekdeh Gh

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**A computational learning paradigm to targeted discovery of biocatalysts from metagenomic data: A case study of lipase identification**

Biotechnology and Bioengineering, 1115-1128, (2022)

Kavousi K., Foroozandeh Shahraki M., Fallah Atanaki F., **Ariaeenejad S.**, Ghaffari M.R., Norouzi-Beirami M.H., Maleki M., Hosseini Salekdeh Gh

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**Efficient saccharification of ionic liquid-pretreated rice straw in a one-pot system using novel metagenomics derived cellulases**

Bioresource Technology, 126536, (2022)

Maleki M., **Ariaeenejad S.**, Hosseini Salekdeh Gh

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**Synergistic Effect of Metagenome-Derived Starch-Degrading Enzymes on Quality of Functional Bread with Antioxidant Activity**

I. Starch-Stärke, 74, 2100098, (2022)

Sadeghian Motahar S.F., Salami M., **Ariaeenejad S.\***, Emam-Djomeh Z., Sheykh Abdollahzadeh Mamaghani A., Kavousi K., Moghadam M., Hosseini Salekdeh Gh

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**The novel homologue of the human  $\alpha$ -glucosidase inhibited by the non-germinated and germinated quinoa protein hydrolysates after in vitro gastrointestinal digestion**

Journal of Food Biochemistry, e14030 (2021)

Salami M., Sadeghian Motahar S.F., **Ariaeenejad S.\***, Abdollahzadeh Mamaghani A.S., Kavousi K., Moosavi-Movahedi Ali A., Hosseini Salekdeh Gh

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**Efficient removal of various textile dyes from wastewater by novel thermo-halotolerant laccase**

Bioresource Technology, 337,125468 (2021)

Motamedi E., Kavousi K., Sadeghian Motahar F., Mohammad Reza Ghaffari, Sheykh Abdollahzadeh Mamaghani A., Hosseini Salekdeh Gh., **Ariaeenejad S.\***

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**Application of free and immobilized novel bifunctional biocatalyst in biotransformation of recalcitrant lignocellulosic biomass**

Chemosphere, 285,131412 (2021)

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Ariaeenejad S.\*, Kavousi K., Maleki M., Motamedi E., Moosavi-Movahedi A.A., Hosseini Salekdeh Gh

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**Highly Efficient Computationally Derived Novel Metagenome  $\alpha$ -Amylase with Robust Stability Under Extreme Denaturing Conditions**

Frontiers in microbiology, 713125, (2021)

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Ariaeenejad S.\*, Zolfaghari B, Sadeghian Motahar, F, Kavousi K., Maleki M., Roy, S., Hosseini Salekdeh Gh

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**Immobilization of enzyme cocktails on dopamine functionalized magnetic cellulose nanocrystals to enhance sugar bioconversion: A biomass reusing loop**

Carbohydrate Polymers, 256, 117511.

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Ariaeenejad S., Motamedi E., Hosseini Salekdeh Gh

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**In-silico discovery of bifunctional enzymes with enhanced lignocellulose hydrolysis from microbiota big data**

International Journal of Biological Macromolecules, 177,211-220 (2021)  
I.

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Ariaeenejad S.\*, Kavousi K., Sheykh Abdollahzadeh Mamaghani A., Sadeghian Motahar F., Nedaei H., Hosseini Salekdeh Gh

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**Upgrading the enzymatic hydrolysis of lignocellulosic biomass by immobilization of metagenome-derived novel halotolerant cellulase on the carboxymethyl cellulose-based hydrogel**

Cellulose, 28(6), 3485-3503 (2021)

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Elaheh Motamedi E, Sadeghian Motahar S.F., Maleki M., Kavousi K., Ariaeenejad S.\*, Moosavi-Movahedi A.A., Hosseini Salekdeh Gh.

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**Improving the quality of gluten-free bread by a novel acidic thermostable  $\alpha$ -amylase from metagenomics data**

Food Chemistry, 352,129307. (2021)

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Sadeghian Motahar S.F., Ariaeenejad S.\*, Salami M., Emam-Djomeh Z., Sheykh Abdollahzadeh Mamaghani A

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**Application of the immobilized enzyme on magnetic graphene oxide nano-carrier as a versatile bi-functional tool for efficient removal of dye from water**

Bioresource Technology, 319, 124228. (2021)

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Ariaeenejad S., Motamedi E., Hosseini Salekdeh Gh.,

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**MCIC: automated identification of cellulases from metagenomic data and characterization based on temperature and pH dependence**

Frontiers in microbiology, 567863, (2020)

Foroozandeh Shahraki M, Ariaeenejad S., Fallah Atanaki F., Zolfaghari B., Koshiba T., Kavousi K., Hosseini Salekdeh Gh

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**A generalized machine-learning aided method for targeted identification of industrial enzymes from metagenome: A xylanase temperature dependence case study**

Biotechnology and Bioengineering, 759-769, (2021)

Foroozandeh Shahraki M, Farhadyar K, Kavousi K. Ariaeenejad S.\*, Hosseini Salekdeh Gh.

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**A novel high performance in-silico screened metagenome-derived alkali-thermostable endo- $\beta$ -1, 4-glucanase for lignocellulosic biomass hydrolysis in the harsh conditions**

BMC biotechnology, 20 (1-13). (2020)

Ariaeenejad S.\*, Sheykh Abdollahzadeh Mamaghani A., Maleki M., Kavousi K., Foroozandeh Shahraki M., Hosseini Salekdeh Gh

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**An efficient nano-biocatalyst for lignocellulosic biomass hydrolysis: Xylanase immobilization on organically modified biogenic mesoporous silica nanoparticles**

International Journal of Biological Macromolecules, 164 (3462-3473). (2020)

Ariaeenejad S. \*, Jokar F., Hadian P., Ma'mani L., Gharaghani S., Fereidoonzhad M., Hosseini Salekdeh Gh

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**A novel metagenome-derived thermostable and poultry feed compatible  $\alpha$ -amylase with enhanced biodegradation properties**

International Journal of Biological Macromolecules, 164 (2124-2133) (2020)

Sadeghian Motahar S.F., Khatibi A., Salami M., Ariaeenejad S.\*, Emam-Djomeh A., Nedaei H., Kavousi K., Sheykhabdolahzadeh Mamaghani A., Hosseini Salekdeh Gh

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**Improvement of PersiXyn2 activity and stability in presence of Trehalose and proline as a natural osmolyte**

International Journal of Biological Macromolecules, 163 (348-357).

Norouzi S., Hajati Birgani N., Maghami P., Ariaeenejad S.\*

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**IAMPE: NMR-Assisted Computational Prediction of Antimicrobial Peptides**

Journal of Chemical Information and Modeling, 60 (10) 4691-4701.

Kavousi K., Bagheri M., Behrouzi S., Vafadar S., Fallah Atanaki F., Teimouri Lotfabadi B., [Ariaeenejad S.](#), Shockravi A., Moosavi-Movahedi A.A.,

**A novel high glucose-tolerant  $\beta$ -Glucosidase: targeted computational approach for metagenomic screening**

Frontiers in bioengineering and biotechnology, (8) 831. (2020)

[Ariaeenejad S.\\*](#), Nooshi-Nedamani S., Rahban M., Kavousi K., Ghasemi Pirbalooti A., Mirghaderi S.S., Mohammadi M., Mirzaei M., Hosseini Salekdeh Gh.

**The stabilizing mechanism of immobilized metagenomic xylanases on bio-based hydrogels to improve utilization performance: computational and functional perspectives**

Bioconjugate Chemistry, 31 (9) 2158-2171 (2020)

[Ariaeenejad S.\\*](#), Lanjanian H., Motamedi E., Kavousi K., Moosavi-Movahedi A.A., Hosseini Salekdeh Gh.

**BIPEP: Sequence-based Prediction of Biofilm Inhibitory Peptides Using a Combination of NMR and Physicochemical Descriptors**

ACS Omega. 5(13) 7290-7297 (2020)

Fallah Atanaki F., Behrouzi S., [Ariaeenejad S.](#), Boroomand A., Kavousi K.

**co-abundance analysis reveals hidden players associated with high methane yield phenotype in sheep rumen microbiome**

Scientific Reports. 10 (1-12). (2020),

Ghanbari Maman L., Palizban F., Fallah Atanaki F., Elmi Ghiasi N., [Ariaeenejad S.](#), Reza Ghaffari R., Hosseini Salekdeh Gh., Kavousi K,

**A novel thermostable cellulase cocktail enhances lignocellulosic bioconversion and biorefining in a broad range of pH**

International Journal of Biological Macromolecules, 349-360 (2020)

Maleki M., Foroozandeh Shahraki M., Kavousi K., [Ariaeenejad S.\\*](#)

**Stable cellulase immobilized on graphene oxide@ CMC-g-poly (AMPS-co-AAm) hydrogel for enhanced enzymatic hydrolysis of lignocellulosic biomass**

), International Journal of Biological Macromolecules, 349-360 (2020)

Maleki M., Foroozandeh Shahraki M., Kavousi K., [Ariaeenejad S.\\*](#),

**Application of carboxymethyl cellulose-g-poly (acrylic acid-co-acrylamide) hydrogel sponges for improvement**

Chemical Engineering Journal. 375,122022. (2019)

**of efficiency, reusability and thermal stability of a recombinant xylanase**

Ariaeenejad S., Hosseini E., Motamedi E., Moosavi-Movahedi A.A., Hosseini Salekdeh Gh.,

**Mining of camel rumen metagenome to identify novel alkali-thermostable xylanase capable of enhancing the recalcitrant lignocellulosic biomass conversion**

Ariaeenejad S., Maleki M., Hosseini E., Kavousi K., Moosavi-Movahedi A.A., Hosseini Salekdeh Gh.,

Bioresource technology. 281(343-350).

(2019)

**Identification and characterization of a novel thermostable xylanase from camel rumen metagenome**

Ariaeenejad S.\* Hosseini E., Maleki M., Kavousi K., Moosavi-Movahedi A.A., Hosseini Salekdeh Gh.,

International journal of biological macromolecules.126 (1295-1302), (2019)

**Novel X-ray Sequences and Crystal Structures of Persian and Starry Sturgeon Methemoglobin: Highlighting the Role of Heme Pocket Waters in causing autoxidation**

Seyedarabi S, Ariaeenejad S., Moosavi-Movahedi A.A., Rayati S., Poursasan N., Asiaie N., Seraj Z., Mehraban F., Seyedarabi S.E

Biochimica et Biophysica Acta (BBA) - Proteins and Proteomics, 6(586-594). (2019)

**The impact of slaughtering methods on physicochemical characterization of sheep myoglobin.**

Hosseini E., Sattari R., Ariaeenejad S., Salami M., Emam-Djomeh Z., Fotouhi L., Poursasan N., Sheibani N., Ghamsari S., Moosavi-Movahedi A.A.,

Journal of the Iranian Chemical Society, 2(315-324). (2019)

**A computational method for prediction of xylanase enzymes activity in strains of Bacillus subtilis based on pseudo amino acid composition features**

Ariaeenejad S., Mousivand M., Moradi Dezfouli P., Hashemi M., Kavousi K., Hosseini Salekdeh Gh.

PloS one, (2018)

**Time–frequency approach in the cluster assignment of amino acids based on their NMR profiles**

Shockravi A., Kavousi K., Rezaia J., Jafari R., Norouzi Beirami M.H., Ariaeenejad S., Moosavi-Movahedi Z., Maghami P., Mortazavian A.M., Moosavi Movahedi A.A

Journal of the Iranian Chemical Society, (2017)

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**Effects of zinc binding on the structure and thermal stability of camel alpha-lactalbumin**

Atri M.S., Saboury Ali A., Moosavi-Movahedi A.A., Kavousi K., Ariaeenejad S.,

**Journal of Thermal Analysis and Calorimetry, 120 (481-488). (2015)**

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**The species and heme pocket properties of Sturgeon hemoglobins upon interaction with n-dodecyl trimethylammonium bromide**

Ariaeenejad S., Moosavi-Movahedi A.A., Kavousi K., Dayer MR., Hong J., Yousefi R., Sheibani N., Habibi-Rezaei M.,

**Protein & Peptide Letters, 21(171-178). (2014)**

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**Denaturation and intermediates study of two sturgeon hemoglobins by n-dodecyl trimethylammonium bromide**

Ariaeenejad S., Habibi-Rezaei M., Kavousi K., Jamili Sh., Fatemi MR., Hong J., Poursasan N., Sheibani N., Moosavi-Movahedi A.A.,

**International Journal of Biological Macromolecules, 53 (107– 113). (2013)**

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**Effect of compatible and noncompatible osmolytes on the enzymatic activity and thermal stability of bovine liver catalase**

H. Sepasi Tehrani, A.A. Moosavi-Movahedi , H. Ghourchian , F. Ahmad , A. Kiany, M.S. Atri , Ariaeenejad S., K. Kavousi & A.A. Saboury

**Journal of Biomolecular Structure and Dynamics, 1440-1454, (2012)**

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**The role of trehalose for metastable state and functional form of recombinant interferon beta-1b**

Fazeli A., Shojaosadati SA., Fazeli MR., Khalifeh K., Ariaeenejad S., Moosavi-Movahedi A.A.

**Journal of Biotechnology, 163 (318–324). (2013)**

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**Effect of Compatible and Non-compatible Osmolytes on the Enzymatic Activity and Thermal Stability of Bovine Liver Catalase**

Sepasi Tehrani H., Moosavi-Movahedi Ali A., Ghourchian H., Ahmad F., Kiany A., Atri MS., Ariaeenejad S., Kavousi K., Saboury Ali A.,

**Journal of Biomolecular Structure and Dynamics, 31(1440–1454). (2013)**

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**Biochemical Characterization of Hemoglobins from Caspian Sea Sturgeons (*Acipenser persicus* and *Acipenser stellatus*)**

Ariaeenejad S., Habibi-Rezaei M., Kavousi K., Jamili Sh., Fatemi MR., Faizan A., Poursasan N., Sheibani N., Moosavi-Movahedi A.A

**Journal of the Cell Biochemistry and Biophysics, 62(73-81). (2012)**

**Omega-3 fatty acids composition and lipid content from liver and muscle tissues of *Esox lucius* in the Caspian Sea (Anzali Port)**

Life Science Journal, 10(167-170).  
(2010)

Samiee K., Rustaiyan A., **Ariaeenejad S.**

## Current Projects

**Computational prediction of oxidoreductase enzymes extracted from tannery wastewater metagenome, Research project from the “Metagenomic Enzyme Discovery Project (MEDP)”, 2021-2023.**

**Identification of thermostable laccases (copper-centered monooxygenases) that can withstand extreme conditions for delignification, detoxification, and biodegradation of the lignocellulosic biomass, Research grant from the “Agricultural Biotechnology Research Institute of Iran (ABRII)”, 2021-2023.**

**Identification, extraction and purification of selected protease and lipase from environmental microbiota for use in the detergent industry, Research grant from the “Agricultural Biotechnology Research Institute of Iran (ABRII)”, 2021-2023.**

**Use of natural polymer-based hydrogel nanocomposites and nanocellulose as immobilization supports for enzyme-improving thermal stability and activity, Research grant from the “Iran National Science Foundation (INSF)”, 2021-2023.**

**Mechanistic study of natural antioxidants (NAOs) on inhibiting the formation of free radicals and their impacts on oxidative stress-related diseases (OSRD), Research project from the “NSFC-INSF Joint Research Program 2021”, 2021-2024.**

## Supervised PhD students

**Donya Afshar Jahanshahi (2020)**  
**(Bioinformatics)**

In-silico and experimental investigation and identification of PET degrading enzymes

**Morteza Maleki (2019)**  
**(Joint supervision with Dr.Hosseini Salekdeh)**

Utilization of metagenomics sources for isolation of enzymes for agricultural application

**Seyed Hossin Moosavi (2020)**  
**(Joint supervision with Dr.Hosseini Salekdeh)**

Identification of microflora and targeted screening of specific hydrolase enzymes degrading lignocellulosic substances in the rumen using metagenomics methods

### Supervised MSc students

<b>Sanaz Najafvand (2021)</b> (Joint supervision with Dr.Motamedi)	Evaluation of biochemical properties of recombinant laccase enzyme from microbiome environment to increase enzyme stability
<b>Tina Ruzban (2021)</b> (Joint supervision with Dr.Motamedi)	Evaluation of the effect of recombinant laccase produced from metagenome data, for biorefining and improving the quality of food products
<b>Seyedeh Fatemeh Sadeghian Motahar (2019)</b> (Joint supervision with Dr.Salami)	Improving the quality of gluten-free bread by a novel acidic thermostable $\alpha$ -amylase from metagenomics data
<b>Nazanin Hajati Birgani (2019)</b> (Joint supervision with Dr.Maghani)	Improvement of xylanase activity and stability presence of trehalose as a natural osmolyte
<b>Sara Norouzi (2019)</b> (Joint supervision with Dr.Maghani)	Improvement of xylanase activity and stability in presence of proline as a natural osmolyte

### Course Titles

- **Bioinformatics**

Institute of Biochemistry and Biophysics, University of Tehran, Tehran, Iran

- **Structure and function of protein**

Institute of Biochemistry and Biophysics, University of Tehran, Tehran, Iran