

DR. ZIA UR RAHMAN

Personal Info

First name: Zia Ur

Last name: Rahman

Date of birth: 01/01/1981

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Profile

Dr. Zia Ur Rahman is working as Assistant Professor with 5+ years of experience (research/teaching) at university level. He is expert in the field of microbiology by publishing peer-reviewed journal publications. He has presented his research work in flagship conferences. While a student, He was awarded first position in Master in microbiology at university of Karachi, Pakistan. He was also awarded KAIST scholarship for doctoral studies at South Korea, which he successfully availed and completed his PhD from a well reputed university, ranked 17 in the world, according to QS ranking 2013.

He was also awarded a research grant by Higher Education Commission of Pakistan. Dr. Zia Ur Rahman has supervised 2+ graduate students of Microbiology.

Work experience

| Year | Designation | Organization |
|------------------|---------------------|--|
| 2/2016-present | Assistant Professor | Abdul Wali Khan University Mardan Mardan Pakistan |
| 1/2015-1/2016 | Assistant Professor | University of Swat Swat Pakistan |
| 02/2008-008-2014 | Research Assistant | Korea Advanced Institute of Science and Technology Daejeon Republic of Korea |

Achievements

- **Academic distinction**
 - First position in Department of Microbiology in the program MSc in Microbiology, University of Karachi, Karachi, Pakistan.
- **Awards**
 - A doctoral scholarship for higher studies by Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Republic of Korea.
- **Research projects**
 - Awarded with a post-doctoral research/teaching under IPFP program of Higher Education Commission of Pakistan from 1/2015-1/2016.
 - Awarded with a research grant of 0.5 M PKR, Startup Research Grant Program (SRGP) by Higher Education Commission of Pakistan in April, 2015.
 - Project coordinator (2012-2014), Engineering microbial genetic network for alkane and biodiesel production, supported by Microbial Biotechnology Laboratory, KAIST. This project is successfully executed and closed in 2014.

- Project coordinator (2012-2014), Engineering microbial genetic network for butanol production, supported by Microbial Biotechnology Laboratory, KAIST. This project is successfully executed and is in closing stage.

Education

| <u>Degree</u> | <u>University</u> | <u>Specialization/Major</u> |
|--|---|--|
| PhD in Biological Sciences (2008-2014) | College of life sciences Department of biological Sciences Korea Advanced Institute of Science and Technology (KAIST) Republic of Korea. | <ul style="list-style-type: none"> • Microbiology • Metabolic and genetic Engineering • Molecular biology |
| MSc in Microbiology (2005-2007) | Department of Microbiology University of Karachi (UoK) Pakistan. | <ul style="list-style-type: none"> • Microbiology • Genetics of microbes • Molecular biology |

Doctoral Thesis

- Alkane and biodiesel production by engineered *Escherichia coli* using a DNA scaffold system.
- Supervisor: Prof. Sun Chang Kim

Research Interest

Applied microbiology to solve the world's problems related of health, energy and environment.

- *Microbial production of industrially important chemicals*
- *Microbial production of renewable biofuels*
- *Microbial production of therapeutic peptides*
- *Biodegradation and biotransformation*

Courses taught (selected list)

- Microbiology and Immunology (Credit hr. 2 +1)
- General Biology (Credit hr. 2 +1)
- Molecular Biology and Bacterial Genetics (Credit hr. 2 +1)
- Environmental Biotechnology (Credit hr. 2 +1)
- Environmental Microbiology (Credit hr. 2 +1)
- Applied Environmental Microbiology (Credit hr. 3.0)
- Energy and Environment (Credit hr. 3.0)
- Human Physiology (Credit hr. 2 +1)

Administrative experience

- Conducted, executed and successfully managed group projects.
- In-charge of Biochemistry Laboratory, Fatima hospital, Baqai Medical University (2003-2004)

Experimental skills

- Genomics

- DNA cutting
- Gene deletion and insertion
- Crispr-cas9 technology
- Proteomics
 - SDS-PAGE
 - Protein purification
 - 2D gel electrophoresis
 - Western blot
- Transcriptomics
 - RNA isolation
 - Microarray technology
- Metabolomics
 - Enzymatic assays
 - Gas chromatography
 - Thin layer chromatography
 - FACS technology

International conferences & seminars

- Attended and presented research paper at “Metabolic Engineering X.0”, held at Westin Bayshore, Vancouver, Canada (15 - 19 July, 2014)
- Attended and presented research paper at “The sixth international meeting on Synthetic Biology SB 6.0”, held at Imperial College London, UK (09 – 11 July, 2013)
- Attended and presented research paper at “Recent Breakthroughs in Microbial Biotechnology: From Bench to Industry, Korea Microbiology and Biotechnology” held at Pyeong Chang, Republic of Korea (2013)
- Attended and presented research paper at “International Conference on Sustainable Energy Engineering and Application (ICSEEA)” held at Indonesia (8 Nov, 2012)

Peer-reviewed journal publications

- **Ziaur Rahman**, Rashid N, Nawab J, Ilyas M, Sung BH, Kim, S. (2016) *Escherichia coli* as a fatty acid and biodiesel factory: current challenges and future directions (accepted) *ESPR* 1614-7499 IF:2.83
 - Le Minh Bui, Ju Young Lee, Almando Geraldi, **Ziaur Rahman**, Jun Hyoung Lee, Sun Chang Kim (2015) Improved n-butanol tolerance in *Escherichia coli* by controlling Membrane Related functions. *Journal of Biotechnology*. 204: 33-44. IF:2.8
 - **Ziaur Rahman**, Ji yen Lee, Bong Hyun Sung, Lee Minh Bui, Jun Hyoung Lee, Sun Chang Kim (2014) Enhanced production of n-alkanes in *Escherichia coli* by spatial organization of biosynthetic pathway enzymes. *Journal of Biotechnology*. 192:187-191. IF:2.8
 - Naim Rashid, Muhammad Saif Ur Rehman, Sheeraz Memon, **Ziaur Rahman**, Kisay Lee, Jong-In Han: (2013) Current status, barriers and developments in biohydrogen production by microalgae. *Renewable and sustainable energy reviews*. 22:571–579. IF:6.7
 - Muhammad Ilyas, **Ziaur Rahman**, Sulaiman Shamas, Mukhtar Alam, Muhammad Israr and Khalid Masood (2011) Bioinformatics analysis of envelope glycoprotein E epitopes of dengue virus Type 3. *African Journal of Biotechnology*. 10:3528-3533.
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Conference publications

- **Ziaur Rahman**, Le Minh Bui, Bong Hyun Sung, Almando Geraldi, Kyo Hun Kang, Jun Hyoung Lee and Sun Chang Kim: Improved N-Alkanes Production In *Escherichia Coli* By Spatial Organization Of Alkane Biosynthetic Pathway Enzymes. Metabolic engineering X, 2014 Vancouver BC (CANADA)
- Le Minh Bui, **Ziaur Rahman**, Almando Geraldi, Kyo Hun Kang, Jun Hyoung Lee and Sun Chang Kim: Molecular approaches to improve 1-butanol tolerance and production in *escherichia coli*. Metabolic engineering X, 2014 Vancouver BC (CANADA)
- Almando Geraldi, Le Minh Bui, **Ziaur Rahman**, Kyo Hun Kang, Jun Hyoung Lee and Sun Chang Kim: A Novel Design Of A Translation Coupling-Rna Scaffold System To Improve The Efficiency Of Molecular Chaperone On Recombinant Proteins Solubilization. Metabolic engineering X, 2014 Vancouver BC, (CANADA)
- Ju Ri Shin Mkp, Le Minh Bui, **Ziaur Rahman**, Almando Geraldi, Jun Hyoung Lee, and Sun Chang Kim: Display of multimeric antimicrobial peptides on the *escherichia coli* cell surface and its application as whole-cell antibiotics. in international meeting on synthetic biology (SB 6.0), Imperial College London, UK; 2013 UK (ENGLAND) <http://www.Sb6.biobricks.org>
- **Ziaur Rahman**, Le Minh Bui, Sun Chang Kim: Development of a high-throughput screening method for the selection of high alkane-producing *Escherichia coli* strains. In International meeting on synthetic biology (SB6.0), Imperial College London, UK; 2013 UK. (ENGLAND) <http://www.Sb6.biobricks.org>
- Muhammad Ilyas, **Ziaur Rahman** and Khalid Masood: Analysis Of Envelope Glycoprotein E Epitopes Of Dengue Virus-3: A Bioinformatics Approach. Young Researchers Conference On Computational And Omics Biology; 2010, proceedings no. 41. (SINGAPORE) <http://2010.ayrcob.org/bioinformatics-week/>
- **Ziaur Rahman**, Bong Hyun Sung, Le Minh Bui, Almando Geraldi, Jun Hyoung Lee, Sun Chang Kim, In vivo metabolite sensing system for the selection of recombinant alkane-producing *Escherichia coli* Strains, International Conference on Sustainable Energy Engineering and Application (ICSEEA); 2012 Proceedings no. IC12-312 (INDONESIA) <http://www.icseea.org>
- Le Minh Bui, Almando Geraldi, **Ziaur Rahman**, Sun Chang Kim, Enhancing 1-butanol tolerance of *Escherichia coli* by the overexpression of the dna-jk-grpE chaperone system, International Conference on Sustainable Energy Engineering and Application (ICSEEA); 2012, Proceedings no. IC12-311 (INDONESIA) <http://www.icseea.org>

References

- Could be provided on demand