

Pattanathu Rahman  
Senior Lecturer  
School of Biological Sciences  
Institute of Biomedical & Biomolecular Sciences  
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United Kingdom  
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## Summary

I am a Microbial Biotechnologist and Director of TeeGene Biotech Ltd. with 20 years' research experience on novel biotechnological approach in bioproduct development. I am a recipient of TU Enterprise Project of the Year – 2016 award and SAB Award of Excellence in Microbial Biotechnology. I am a Fellow of Royal Society of Arts, Member of the Institute of Environmental Science and Associate member of IChemE. I am serving as Research Topic Editor of Frontiers in Microbiology and Associate Editor of 'Frontiers in Environmental Science. I have published over 100 journals and conference publications (Source: ORCID). I am serving as Visiting Professor at SOA University (India).

I have completed with distinctions in BSc Zoology (PSG College) & MSc Ecobiology (Bharathiar University), and MPhil Environmental Science (Anna University) followed by a PhD in Environmental Microbiology at Bharathiar University (India). Then Completed Advanced Biologics and Biopharmaceutical summer school at Cambridge University and New Entrepreneur course at Teesside University Business School. I spent one year on a postdoc research officer at Ulster University in Prof Ibrahim Banat's Biosurfactant Research group, followed by an US DOE sponsored Research Scientist position at Brookhaven National Laboratory; New York (USA) to work on the mineral-microbe association and their regulation of enzyme catalysed transformations. Then, I worked as Postdoctoral Fellow at the ERDF/HEIF Bioremediation programme at Teesside University to help over 50 industries in the Northeast and introduced 'bioremediation' as a part of their strategic waste management plans and Co-Investigated in DEFRA funded Bio-recycling: Resource recovery and reduction of oily hazardous wastes via biosurfactant washing and bioremediation and EU LIFE 3 programme on Biomass, Remediation, Regeneration (BioReGen): Reusing Brownfield Sites for Renewable Energy Crops.

I have coordinated BfB KTN sponsored FROPTOP project: 'Exploring the biocatalytic pathways of the microbial biosurfactant production from biodiesel industry residual glycerine' and this work led to the creation of the spin-out company TeeGene. The company was runner-up at IChemE – Best Business Start-up award 2015 and IBLF award 2015. I have been selected to represent British R&D delegation to New Zealand British High Commission to establish collaborative links in Agriculture and Plant and Food Research with New Zealand's Crown Research Institutes in Feb 2016, followed by organising a BBSRC sponsored Algal Biotechnology workshop at Cawthron Institute in 2017. I have been part of Royal Society-Indian DST funded research network development project, running a Biofuel workshop in India followed by a RCUK sponsored Waste Valorisation. I took part in an international Indo-Thai collaborative workshop on new biofuel technology with the support of the Prime Minister's Initiative. Most recently we have organised 1<sup>st</sup> Sino-British Algal Biotechnology Forum at the Institute of Hydrobiology, Wuhan (Chinese academy of Science) and formed a major Sino-British academic/industry collaborative network funded by BBSRC Phyconet.

I have collaboratively secured five Business Interaction Vouchers from BBSRC-CBMNet, BBSRC-Phyconet, BBSRC-Metals in Biology net, BBSRC-HVCfP, BBSRC-Foodwastenet and two proof of concept grants from BBSRC-CBMNet. The BBSRC grant has enabled TeeGene Biotech to undertake a project to explore the use of naturally occurring microorganisms, microalgae, in the treatment of industrial waste water as well as their potential as a high value chemical ingredient. We have also scale-up our biosurfactant production process in 150L fermenter at BBEPP pilot plant Belgium using the INTERREG EU BBNWE consortium grant. I have been working in various interdisciplinary projects which include Bioprocess and Biotechnology. My current research is concentrated on the Biosurfactants and collaborative with companies to commercialise the technology.

### Research

Biosurfactants and Bio-emulsifiers for cosmetics and therapeutic applications

Fermentation based Biotherapeutics using alternate feed

Water and Wastewater treatment using biotechnology

Bionanomaterials synthesis – Gold, silver, platinum, copper, Iron group of metals

Carbon capturing through Algal Biorefinery and valorisation of wastes (organic, metals, sewage, industrial sludge, food waste, municipal solid waste)

## Employment

### Senior Lecturer

Senior Lecturer  
School of Biological Sciences  
University of Portsmouth

Portsmouth, United Kingdom

1 Oct 2018 → present

**Institute of Biomedical & Biomolecular Sciences**

University of Portsmouth

United Kingdom

1 Oct 2018 → present

**Senior Lecturer in Process Engineering and Biotechnology**

Teesside University

Middlesbrough, United Kingdom

1 Jan 2007 → 1 Jan 2018

**Project Development Officer**

Teesside University

Middlesbrough, United Kingdom

1 Jan 2003 → 1 Jan 2007

**Postdoctoral Research Associate**

Brookhaven National Laboratory

Upton, United States

1 Jan 2001 → 1 Jan 2002

**Postdoctoral Research Officer**

University of Ulster

COLERAINE, United Kingdom

1 Jan 2000 → 1 Jan 2001

## Research outputs

**Integrated remediation processes towards heavy metal removal/recovery from various environments - a review**

Aruliah, R., Selvi, A., Theertagiri, J., Ananthaselvam, A., Sathish Kumar, K., Madhavan, J. & Dr Pattanathu Rahman, 22 May 2019, In : *Frontiers in Environmental Science*. 7, 66.

**Removal of Cd<sup>++</sup> from contaminated water using bio-surfactant modified ground grass as a biosorbent**

Ghaith, E-S., Rizwi, S., Namasivayam, C. & Dr Pattanathu Rahman, 16 May 2019, *2019 Advances in Science and Engineering Technology International Conferences (ASET)*. IEEE, 7 p. (Advances in Science and Engineering Technology).

**Statistical and sequential (fill-and-draw) approach to enhance rhamnolipid production using industrial lignocellulosic hydrolysate C6 stream from *Achromobacter* sp. (PS1)**

Joy, S., Dr Pattanathu Rahman, Khare, S. K., Soni, S. R. & Sharma, S., 16 May 2019, In : *Bioresource Technology*.

**Production and characterization of glycolipid biosurfactant from *Achromobacter* sp. (PS1) isolate using one-factor-at-a-time (OFAT) approach with feasible utilization of ammonia-soaked lignocellulosic pretreated residues**

Joy, S., Dr Pattanathu Rahman, Khare, S. K. & Sharma, S., 26 Apr 2019, In : *Bioprocess and Biosystems Engineering*. 15 p.

**In silico engineering of *Pseudomonas* metabolism reveals new biomarkers for increased biosurfactant production**

Occhipinti, A., Eyassu, F., Rahman, T. J., Dr Pattanathu Rahman & Angione, C., 17 Dec 2018, In : *PeerJ*. 25 p., e6046.

**Biosurfactants and bioemulsifiers from marine algae**

Dr Pattanathu Rahman, Mayat, A., Harvey, J. G. H., Randhawa, K. S., Relph, L. E. & Armstrong, M. C., 8 Dec 2018, *The Role of Microalgae in Wastewater Treatment*. Sukla, L. B., Subudhi, E. & Pradhan, D. (eds.). Springer, p. 169-188

**Invest in technology to boost recycling**

Dr Pattanathu Rahman, 3 Dec 2018, Materials Recycling World, p. 23 1 p.

**Screening microalgae species for wastewater phosphate removal/recovery and high value chemicals production**

Ennis, C. & Dr Pattanathu Rahman, 17 Sep 2018. 2 p.

**Anaerobic digestion enhancement with microbial electrolysis cells: is biomethane production the direction to go for commercialization?**

Vipond, E. & Dr Pattanathu Rahman, 27 Apr 2018, *Handbook of Research on Microbial Tools for Environmental Waste Management*. Pathak, V. M. & Navneet (eds.). IGI Global, p. 259-269 (Advances in Environmental Engineering and Green Technologies ).

**Bioprocessing requirements for bioethanol: sugarcane vs. sugarcane bagasse**

Anderson, S. & Dr Pattanathu Rahman, 27 Apr 2018, *Handbook of Research on Microbial Tools for Environmental Waste Management*. Pathak, V. M. & Navneet (eds.). IGI Global, p. 48-56 (Advances in Environmental Engineering and Green Technologies).

**Characterization of hydrocarbon degrading bacteria isolated from Indian crude oil reservoir and their influence on biocorrosion of carbon steel API 5LX**

Parthipan, P., Elumalai, P., Ting, Y. P., Dr Pattanathu Rahman & Rajasekar, A., 1 Apr 2018, In : International Biodeterioration & Biodegradation. 129, p. 67-80

**Biosurfactants produced by Bacillus subtilis A1 and Pseudomonas stutzeri NA3 reduce longevity and fecundity of Anopheles stephensi and show high toxicity against young instars**

Parthipan, P., Sarankumar, R. K., Jaganathan, A., Amuthavalli, P., Babujanathanam, R., Dr Pattanathu Rahman, Murugan, K., Higuchi, A., Benelli, G. & Rajasekar, A., Apr 2018, In : Environmental Science and Pollution Research. 25, 11, p. 10471-10481 11 p.

**Statistical optimization for lipase production from solid waste of vegetable oil industry**

Sahoo, R. K., Kumar, M., Mohanty, S., Sawyer, M., Dr Pattanathu Rahman, Sukla, L. B. & Subudhi, E., Apr 2018, In : Preparative Biochemistry and Biotechnology. 48, 4, p. 321-326

**Biodegradation of wool by bacteria and fungi and enhancement of wool quality by biosurfactant washing**

Jibia, S. A., Mohanty, S., Dondapati, J. S., O'hare, S. & Dr Pattanathu Rahman, Mar 2018, In : Journal of Natural Fibers. 15, 2, p. 287-295 9 p.

**Industry experts give their thoughts on three key questions for the bio-based industry in 2018**

Dr Pattanathu Rahman, 17 Jan 2018, Bio-Based World News.

**Growth kinetic and fuel quality parameters as selective criterion for screening biodiesel producing cyanobacterial strains**

Gayathri, M., Shunmugam, S., Mugasundari, A. V., Dr Pattanathu Rahman & Muralitharan, G., 1 Jan 2018, In : Bioresource Technology. 247, p. 453-462 10 p.

**Recent bioreduction of hexavalent chromium in wastewater treatment: a review**

Pradhan, D., Sukla, L. B., Sawyer, M. & Dr Pattanathu Rahman, 25 Nov 2017, In : Journal of Industrial and Engineering Chemistry. 55, p. 1-20 20 p.

**இயற்கை வழிமுறைகளைப் பயன்படுத்தி கொசுக்கள் கட்டுப்பாடு**

Dr Pattanathu Rahman, 4 Nov 2017, Dinakaran.

**Probiotics and their health benefits**

Fleet, M. & Dr Pattanathu Rahman, 2 Nov 2017, *Microbial Functional Foods and Nutraceuticals*. Gupta, V. K., Treichel, H., Shapaval, V. O., de Oliveira, L. A. & Tuohy, M. G. (eds.). Wiley, p. 267-280

### **Recent developments in Biosurfactants**

Dr Pattanathu Rahman (ed.), Joshi, S. (ed.) & Makkar, R. (ed.), 11 Jul 2017, In : *Frontiers in Microbiology*.

### **Processing of bioethanol from lignocellulosic biomass**

Gunn, R. & Dr Pattanathu Rahman, 5 Jun 2017, *Advances in Biofeedstocks and Biofuels: Production Technologies for Biofuels*. Singh, L. K. & Chaudhary, G. (eds.). Scrivener Publishing, p. 1-24

### **The production of biomethane from the anaerobic digestion of microalgae**

Bishop, T. & Dr Pattanathu Rahman, 5 Jun 2017, *Advances in Biofeedstocks and Biofuels: Production Technologies for Biofuels*. Singh, L. K. & Chaudhary, G. (eds.). Scrivener Publishing, Vol. 2. p. 177-200 24 p.

### **Biosurfactant production and concomitant hydrocarbon degradation potentials of bacteria isolated from extreme and hydrocarbon contaminated environments**

Joy, S., Dr Pattanathu Rahman & Sharma, S., 1 Jun 2017, In : *Chemical Engineering Journal*. 317, p. 232-241 10 p.

### **Biofuel production: tapping into microalgae despite challenges**

Randhawa, K. S., Relph, L. E., Armstrong, M. C. & Dr Pattanathu Rahman, Mar 2017, In : *Biofuels*. 8, 2, p. 261-271 11 p.

### **Biosurfactant and degradative enzymes mediated crude oil degradation by bacterium *Bacillus subtilis* A1**

Parthipan, P., Preetham, E., Machuca, L. L., Dr Pattanathu Rahman, Murugan, K. & Rajasekar, A., 9 Feb 2017, In : *Frontiers in Microbiology*. 8, FEB, 193.

### **Follow-up methods for autonomic repairing process**

Insaurralde, C. C., Dr Pattanathu Rahman, Ramegowda, M. & Vemury, C. M., 9 Feb 2017, *2016 IEEE International Conference on Systems, Man, and Cybernetics, SMC 2016 - Conference Proceedings*. Institute of Electrical and Electronics Engineers Inc., p. 4854-4859 6 p. 7844997

### **Facile synthesis of *Curcuma longa* tuber powder engineered metal nanoparticles for bioimaging applications**

Sankar, R., Dr Pattanathu Rahman, Varunkumar, K., Anusha, C., Kalaiarasi, A., Shivashangari, K. S. & Ravikumar, V., 5 Feb 2017, In : *Journal of Molecular Structure*. 1129, p. 8-16 9 p.

### **Biosurfactant production and biodegradation of leather dust from tannery**

Greenwell, M., Sarker, M. & Dr Pattanathu Rahman, 11 Nov 2016, In : *Open Biotechnology Journal*. 10, Suppl-2, M4, p. 312-325 14 p.

### **Bioremediation of acid mine drainage and Biosurfactants from *Pseudomonas teessidea***

Dr Pattanathu Rahman, 25 Jun 2016

### **Microbiotechnology Based Surfactants and their Applications**

Dr Pattanathu Rahman (ed.), 1 Feb 2016, In : *Frontiers in Microbiology*. 128 p.

### **Commentary: Oil degradation and biosurfactant production by the deep sea bacterium *Dietzia maris* As-13-3**

Dr Pattanathu Rahman & Randhawa, K. K. S., 12 Jan 2016, In : *Frontiers in Microbiology*. 6, 1557.

### **Editorial: Microbiotechnology based surfactants and their applications**

Dr Pattanathu Rahman & Sekhon Randhawa, K. K., 1 Dec 2015, In : *Frontiers in Microbiology*. 6, 01344.

### **Bioemulsifiers are not biosurfactants and require different screening approaches**

Uzoigwe, C., Burgess, J. G., Ennis, C. J. & Dr Pattanathu Rahman, 7 Apr 2015, In : *Frontiers in Microbiology*. 6, 245.

### **Production of biosurfactants using eco-friendly microorganisms**

Uzoigwe, C., Ennis, C. J. & Dr Pattanathu Rahman, Jan 2015, *Environmental Sustainability: Role of Green Technologies*. Thangavel, P. & Sridevi, G. (eds.). Springer, p. 185-204 20 p.

**Biogenic copper oxide nanoparticles synthesis using *Tabernaemontana divaricate* leaf extract and its antibacterial activity against urinary tract pathogen**

Sivaraj, R., Dr Pattanathu Rahman, Rajiv, P., Salam, H. A. & Venckatesh, R., 10 Dec 2014, In : Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy. 133, p. 178-181 4 p.

**Biosynthesis and characterization of phyto mediated zinc oxide nanoparticles: a green chemistry approach**

Vanathi, P., Rajiv, P., Narendhran, S., Rajeshwari, S., Dr Pattanathu Rahman & Venckatesh, R., 1 Nov 2014, In : Materials Letters. 134, p. 13-15 3 p.

**Biomediated synthesis of silver nanoparticles using *Exiguobacterium mexicanum***

Padman, A. J., Henderson, J., Hodgson, S. & Dr Pattanathu Rahman, Oct 2014, In : Biotechnology Letters. 36, 10, p. 2079-2084 6 p.

**Rhamnolipid biosurfactants-past, present, and future scenario of global market**

Randhawa, K. K. S. & Dr Pattanathu Rahman, 2 Sep 2014, In : Frontiers in Microbiology. 5, 454.

**Biosynthesis and characterization of *Acalypha indica* mediated copper oxide nanoparticles and evaluation of its antimicrobial and anticancer activity**

Sivaraj, R., Dr Pattanathu Rahman, Rajiv, P., Narendhran, S. & Venckatesh, R., 14 Aug 2014, In : Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy. 129, p. 255-258 234 p.

**Biological reduction of iron to the elemental state from ochre deposits of Skelton Beck in Northeast England**

Dr Pattanathu Rahman & Bastola, S., 17 Jun 2014, In : Frontiers in Environmental Science. 2, June 2014, 8 p., 22.

**Quorum sensing: Implications on rhamnolipid biosurfactant production**

Dusane, D. H., Zinjarde, S. S., Venugopalan, V. P., McLean, R. J. C., Weber, M. M. & Dr Pattanathu Rahman, 15 Apr 2013, In : Biotechnology and Genetic Engineering Reviews. 27, 1, p. 159-184 26 p.

**A comparative study of polymethylmethacrylate/cellulose nanocomposites prepared by in situ polymerization and ex situ dispersion techniques**

Sain, S., Bose, M., Ray, D., Mukhopadhyay, A., Sengupta, S., Kar, T., Ennis, C. J., Dr Pattanathu Rahman & Misra, M., 1 Feb 2013, In : Journal of Reinforced Plastics and Composites. 32, 3, p. 147-159 13 p.

**Synthesis and characterization of PMMA-cellulose nanocomposites by in situ polymerization technique**

Sain, S., Ray, D., Mukhopadhyay, A., Sengupta, S., Kar, T., Ennis, C. J. & Dr Pattanathu Rahman, 25 Oct 2012, In : Journal of Applied Polymer Science. 126, SUPPL. 1, p. E127-E134

**Influence of nitrogen and phosphorus on rhamnolipid biosurfactant production by *Pseudomonas aeruginosa* DS10-129 using glycerol as carbon source**

Mehdi, S., Dondapati, J. S. & Dr Pattanathu Rahman, 9 Jun 2011, In : Biotechnology. 10, 2, p. 183-189 7 p.

**Microfluidic bioreactors for cell culturing: A review**

Pasirayi, G., Auger, V., Scott, S. M., Dr Pattanathu Rahman, Islam, M., O'Hare, L. & Ali, Z., 1 Jan 2011, In : Micro and Nanosystems. 3, 2, p. 137-160 24 p.

**Production of rhamnolipid biosurfactants by *Pseudomonas aeruginosa* DS10-129 in a microfluidic bioreactor**

Dr Pattanathu Rahman, Pasirayi, G., Auger, V. & Ali, Z., 23 Dec 2010, In : Biotechnology and Applied Biochemistry. 55, 1, p. 45-52 8 p.

**Effects of rhamnolipids from *pseudomonas aeruginosa* DS10-129 on luminescent bacteria: Toxicity and modulation of cadmium bioavailability**

Bondarenko, O., Dr Pattanathu Rahman, Rahman, T. J., Kahru, A. & Ivask, A., Apr 2010, In : Microbial Ecology. 59, 3, p. 588-600 13 p.

**Characterization of corrosive bacterial consortia isolated from petroleum-product-transporting pipelines**

Rajasekar, A., Anandkumar, B., Maruthamuthu, S., Ting, Y. P. & Dr Pattanathu Rahman, 1 Jan 2010, In : Applied Microbiology and Biotechnology. 85, 4, p. 1175-1188 14 p.

**Impact of ammonia producing bacillus sp. on corrosion of cupronickel alloy 90: 10**

Maruthamuthu, S., Dhandapani, P., Ponmariappan, S., Bae, J. H., Palaniswamy, N. & Dr Pattanathu Rahman, 1 Jun 2009, In : Metals and Materials International. 15, 3, p. 409-419 11 p.

**Development of a simple and low cost microbioreactor for high-throughput bioprocessing**

Dr Pattanathu Rahman, Pasirayi, G., Auger, V. & Ali, Z., 1 Feb 2009, In : Biotechnology Letters. 31, 2, p. 209-214 6 p.

**Impact of sugar factory effluent on the growth and biochemical characteristics of terrestrial and aquatic plants**

Ayyasamy, P. M., Yasodha, R., Rajakumar, S., Lakshmanaperumalsamy, P., Dr Pattanathu Rahman & Lee, S., 1 Nov 2008, In : Bulletin of Environmental Contamination and Toxicology. 81, 5, p. 449-454 6 p.

**Production, characterisation and applications of biosurfactants - Review**

Dr Pattanathu Rahman & Gakpe, E., 3 Jul 2008, In : Biotechnology. 7, 2, p. 360-370 11 p.

**Bioremediation of petroleum sludge using bacterial consortium with biosurfactant**

Dr Pattanathu Rahman, Rahman, T. J., Banat, I. M., Lord, R. & Street, G., 1 Dec 2007, *Environmental Bioremediation Technologies*. Springer, p. 391-408 18 p.

**Stabilization of chromium by reductase enzyme treatment**

Dr Pattanathu Rahman & Murthy, M. A. V., 1 Dec 2005, *Stabilisation/Solidification Treatment and Remediation: Advances in S/S for Waste and Contaminated Land - Proceedings of the Int. Conf. on Stabilisation/Solidification Treatment and Remediation*. p. 347-356 10 p.

**Bioremediation of hydrocarbon contaminated gasoline station soil by a bacterial consortium**

Dr Pattanathu Rahman, Street, G., Lord, R., Kane, G. & Banat, I. M., 11 Oct 2004, *WIT Transactions on Ecology and the Environment*. Vol. 10. p. 401-407 7 p. (Environmental Studies).

**The potential of bacterial isolates for emulsification with a range of hydrocarbons**

Dr Pattanathu Rahman, Rahman, T. J., Lakshmanaperumalsamy, P., Marchant, R. & Banat, I. M., 1 Dec 2003, In : Acta Biotechnologica. 23, 4, p. 335-345 11 p.

**Enhanced bioremediation of n-alkane in petroleum sludge using bacterial consortium amended with rhamnolipid and micronutrients**

Dr Pattanathu Rahman, Rahman, T. J., Kourkoutas, Y., Petsas, I., Marchant, R. & Banat, I. M., 1 Jan 2003, In : Bioresource Technology. 90, 2, p. 159-168 10 p.

**Bioremediation of hydrocarbon pollution using biosurfactant producing oil degrading bacteria**

Banat, I. M., Dr Pattanathu Rahman & Thahira-Rahman, J., 1 Dec 2002, *Oil and Gas Hydrocarbon Spills III: Modelling, Analysis and Control*. Brebbia, C. A. (ed.). WITPress, Vol. 11. p. 221-230 10 p.

**Towards efficient crude oil degradation by a mixed bacterial consortium**

Dr Pattanathu Rahman, Thahira-Rahman, J., Lakshmanaperumalsamy, P. & Banat, I. M., 1 Dec 2002, In : Bioresource Technology. 85, 3, p. 257-261 5 p.

**Occurrence of crude oil degrading bacteria in gasoline and diesel station soils**

Dr Pattanathu Rahman, Rahman, T., Lakshmanaperumalsamy, P. & Banat, I. M., 31 Aug 2002, In : Journal of Basic Microbiology. 42, 4, p. 284-291 8 p.

**Bioremediation of gasoline contaminated soil by a bacterial consortium amended with poultry litter, coir pith and rhamnolipid biosurfactant**

Dr Pattanathu Rahman, Banat, I. M., Thahira, J., Thayumanavan, T. & Lakshmanaperumalsamy, P., 1 Jan 2002, In : Bioresource Technology. 81, 1, p. 25-32 8 p.

**Rhamnolipid biosurfactant production by strains of Pseudomonas aeruginosa using low-cost raw materials**

Dr Pattanathu Rahman, Rahman, T. J., McClean, S., Marchant, R. & Banat, I. M., 1 Jan 2002, In : Biotechnology Progress. 18, 6, p. 1277-1281 5 p.

**Biodegradation of petroleum refinery waste oil sludge**

Thayumanavan, T., Dr Pattanathu Rahman & Lakshmanaperumalsamy, P., 1 Jan 2001, In : Pollution Research. 20, 2, p. 155-161 7 p.

## Activities

**Gave the presentation 'Water and wastewater treatment using biotechnology'**

Dr Pattanathu Rahman (Speaker)  
18 Nov 2019

**Passing craze or here to stay? Biosurfactants in the mainstream**

Dr Pattanathu Rahman (Speaker)  
18 Sep 2019 → 19 Sep 2019

**Keynote address on "Bioremediation of industrial waste using biosurfactants"**

Dr Pattanathu Rahman (Speaker)  
7 Aug 2019 → 9 Aug 2019

**Chair, Re-accreditation Panel, Faculty of Food Technology and Biotechnology, University of Zagreb (Croatia)**

Dr Pattanathu Rahman (Consultant)  
10 Jun 2019 → 14 Jun 2019

**National Conference on Green Technology for Clean Environment**

Dr Pattanathu Rahman (Member of programme committee)  
20 May 2019

**Environmental Biotechnology Network (EBNet) (External organisation)**

Dr Pattanathu Rahman (Member)  
15 May 2019 → ...

**MSc Biotechnology - UoP Global Experience 2019**

Dr Pattanathu Rahman (Speaker)  
2 May 2019

**BIOSURFACTANTS: Multifunctional biomolecules of the 21st century**

Dr Pattanathu Rahman (Speaker)  
1 May 2019

**Short scoping study for potential for valorisation of waste horse bedding**

Professor Simon Cragg (Speaker), Laura Michie (Speaker), Dr Muhammad Ali (Speaker), Peter Hooley (Speaker), Dr Pattanathu Rahman (Speaker), Dr Graham Wall (Speaker), Jon Scargill (Speaker), Dr Joy Watts (Speaker)  
22 Mar 2019

**Academic joins British Council Biotechnology for tour across India**

Dr Pattanathu Rahman (Invited speaker)  
15 Mar 2019

**Waste to Wealth: Bioprocess for the detoxification of chromium-contaminated solid tannery waste and the exploitation of potential high value-added products**  
Dr Pattanathu Rahman (Speaker)  
15 Mar 2019

**Christ University, Bangalore**  
Dr Pattanathu Rahman (Visiting researcher)  
1 Mar 2019

**PES University**  
Dr Pattanathu Rahman (Visiting researcher)  
1 Mar 2019

**PES University Guest Lecture: Research and Development in Biosurfactants and the introduction of synthetic Biology to improve the microbial processes**  
Dr Pattanathu Rahman (Speaker)  
1 Mar 2019

**Jain University**  
Dr Pattanathu Rahman (Visiting researcher)  
28 Feb 2019

**St. Joseph's College of Arts & Science**  
Dr Pattanathu Rahman (Visiting researcher)  
28 Feb 2019

**SRM University**  
Dr Pattanathu Rahman (Visiting researcher)  
25 Feb 2019

**Rajalakshmi Engineering College**  
Dr Pattanathu Rahman (Visiting researcher)  
24 Feb 2019

**Saveetha Institute of Medical and Technical Sciences**  
Dr Pattanathu Rahman (Visiting researcher)  
24 Feb 2019

**Ahmedabad University**  
Dr Pattanathu Rahman (Visiting researcher)  
22 Feb 2019

**Gujarat State Biotechnology Mission**  
Dr Pattanathu Rahman (Visiting researcher)  
22 Feb 2019

**Indian Institute of Technology, Gandhinagar**  
Dr Pattanathu Rahman (Visiting researcher)  
22 Feb 2019

**Nirma University**  
Dr Pattanathu Rahman (Visiting researcher)  
21 Feb 2019



**Frontiers in Microbiology (Journal)**  
Dr Pattanathu Rahman (Guest editor)  
21 Nov 2018

**Applisurf Lauch Event**  
Dr Pattanathu Rahman (Participant)  
8 Oct 2018

**Biosurfactants and Mosquito Control Research**  
Dr Pattanathu Rahman (Invited speaker)  
29 Jul 2018

**Biosurfactants**  
Dr Pattanathu Rahman (Invited speaker)  
28 Jul 2018

**Commercialisation of Research: Biosurfactants and Bioemulsifiers**  
Dr Pattanathu Rahman (Speaker)  
27 Jul 2018

**THYME Project - University commercialisation across the Country**  
Dr Pattanathu Rahman (Speaker)  
11 Jul 2018

**Northern bacteria: survival was my only hope, success is the best revenge**  
Dr Pattanathu Rahman (Speaker)  
20 Jun 2018

**PhD Thesis - BIOSURFACTANT PRODUCTION BY FERMENTATION OF PALM OIL AGRICULTURAL REFINERY WASTE**  
Dr Pattanathu Rahman (Examiner)  
27 May 2018

**Biosurfactants and Bioemulsifiers**  
Dr Pattanathu Rahman (Speaker)  
10 May 2018

**PhD Thesis - Phosphate Removal from secondary treated municipal wastewater by Staphylococcus aureus**  
Dr Pattanathu Rahman (Examiner)  
2 May 2018

**MEng Thesis - Purification of Bacillus amyloliquefaciens lipopeptides for postharvest disease control - Stellenbosch University**  
Dr Pattanathu Rahman (Examiner), Kimberly Clarke (Examiner)  
7 Jan 2018

**1st Sino-British Algal Biotechnology Forum (Event)**  
Dr Pattanathu Rahman (Member)  
2018 → ...

**Centre for Translational Research in Public Health (External organisation)**  
Dr Pattanathu Rahman (Member)  
2018

**Thiruvalluvar University**

Dr Pattanathu Rahman (Visiting researcher)  
2018 → ...

**PhD Thesis - An investigation of the potential biocidal activity of microbial Biosurfactants against bacteria important in oral and personal hygiene**

Dr Pattanathu Rahman (Examiner)  
8 Oct 2017

**PhD Thesis - Cytokine genes polymorphism in pregnant women at a risk of preeclampsia**

Dr Pattanathu Rahman (Examiner)  
7 Oct 2017

**PhD Thesis - Study of cyanobacterial secondary metabolites for antifungal compounds**

Dr Pattanathu Rahman (Examiner)  
2 Oct 2017

**Algal Biosurfactants and Bioemulsifiers**

Dr Pattanathu Rahman (Speaker)  
14 Aug 2017 → 17 Aug 2017

**Mouldy bread given new lease of life as cleaning products and Careers in Food Science and Biotechnology**

Dr Pattanathu Rahman (Speaker)  
20 Jun 2017

**PhD Thesis - CYANOBACTERIA AS AN ALTERNATIVE FUEL: STRAIN SELECTION, MEDIA OPTIMISATION AND TECHNO-ECONOMIC ASSESSMENTS**

Dr Pattanathu Rahman (Examiner)  
20 Jun 2017

**PhD Thesis: Isolation and Identification of mineral solubilizing fungi and its effects on the growth and yield of *Arachis hypogaea* L**

Dr Pattanathu Rahman (Examiner)  
19 Jun 2017

**PhD Thesis - Molecular characterization and functional analysis of gut serine protease (37 kDa) of *Bombyx mori***

Dr Pattanathu Rahman (Examiner)  
19 Apr 2017

**PhD Thesis - Biodegradation of Petroleum Hydrocarbons (BTEX) by bacterial consortium in contaminated soil and water**

Dr Pattanathu Rahman (Examiner)  
18 Apr 2017

**Circular Economy Club (External organisation)**

Dr Pattanathu Rahman (Member)  
2017 → ...

**National Biofilms Innovation Centre (External organisation)**

Dr Pattanathu Rahman (Member)  
2017 → ...

**PhD Thesis - Bioremediation of dairy wastes by acquiring biometabolites and biogas**

Dr Pattanathu Rahman (Examiner)  
5 Jun 2016

**PhD Thesis: Studies on detoxification of polyaromatic hydrocarbons in ground water and soil using *Micrococcus luteus* (BN4) through lab scale process**

Dr Pattanathu Rahman (Examiner)

16 Apr 2016

**PhD Thesis: Effect of typical and pre-treated fungal adsorbents on fluoride removal from ground water and its impact on onion root molecules**

Dr Pattanathu Rahman (Examiner)

30 Mar 2016

**PhD Thesis (Biotechnology): Method development, validation and determination of melamine residues in milk and milk products and biodegradation of melamine**

Dr Pattanathu Rahman (Examiner)

29 Mar 2016

**PhD Thesis: Optimisation and characterisation of biodegradable adhesives produced by bacterial isolates**

Dr Pattanathu Rahman (Examiner)

23 Feb 2016

**Biotechnology and Biological Sciences Research Council (External organisation)**

Dr Pattanathu Rahman (Member)

2016 → ...

**Biotechnology and Biological Sciences Research Council (External organisation)**

Dr Pattanathu Rahman (Member)

2016 → ...

**PhD Thesis - A greener approach for the synthesis of chromium (II) nanoparticle during the process of biosorption using *Bacillus subtilis***

Dr Pattanathu Rahman (Examiner), K Shanthy (Supervisor) (Examiner)

13 Jul 2015

**Biosurfactants: Green marketing tool for sustainability**

Dr Pattanathu Rahman (Speaker)

3 Jul 2015 → 4 Jul 2015

**CO or CO<sub>2</sub> based fermentation technology to produce Bioemulsifiers and Biosurfactants - 3 minutes Pitch**

Dr Pattanathu Rahman (Speaker)

23 Jun 2015 → 24 Jun 2015

**PhD Thesis: Designing and fabrication of household biofilter for fluoride contaminated ground water**

Dr Pattanathu Rahman (Examiner)

16 Apr 2015

**PhD Thesis: Enhancement of lipid production in natural isolates of microalgae, their optimisation and cloning of *accD* gene for increased acetyl coenzyme A carboxylase activity**

Dr Pattanathu Rahman (Examiner)

14 Apr 2015

**PhD Thesis (Biotechnology): Comparative photocatalysis of the textile dye Blue RGB using green synthesised metal oxide nanoparticles and its composite and assessing the in vitro cardiotoxic effects of the photocatalysed dye**

Dr Pattanathu Rahman (Examiner)

12 Apr 2015

**PhD Thesis (Biotechnology): Biodegradation of azo dyes**

Dr Pattanathu Rahman (Examiner)

11 Apr 2015

**PhD Thesis - FORMULATION AND EVALUATION OF POLYMER BASED NANOSTRUCTURE DELIVERY SYSTEM FOR ENHANCED ANTINEOPLASTIC ACTIVITY OF SUBEROYLANILIDE HYDROXAMIC ACID IN NON-SMALL CELL LUNG CANCER CELL LINE**

Dr Pattanathu Rahman (Examiner)

9 Apr 2015

**PhD Thesis: Studies on nitrate removal from ground water and soil through lab scale processes using denitrifying bacteria**

Dr Pattanathu Rahman (Examiner)

28 Jan 2015

**BBSRC-Metals in Biology Network (External organisation)**

Dr Pattanathu Rahman (Member)

2015 → ...

**BBSRC-Metals in Biology Network (External organisation)**

Dr Pattanathu Rahman (Member)

2015 → ...

**Biotechnology and Biological Sciences Research Council (External organisation)**

Dr Pattanathu Rahman (Member)

2015 → ...

**Biotechnology and Biological Sciences Research Council (External organisation)**

Dr Pattanathu Rahman (Member)

2015 → ...

**Biotechnology and Biological Sciences Research Council (External organisation)**

Dr Pattanathu Rahman (Member)

2015 → ...

**Frontiers in Environmental Science (Journal)**

Dr Pattanathu Rahman (Editorial board member)

2015 → ...

**University of St Andrews (External organisation)**

Dr Pattanathu Rahman (Member)

2015

**MRes Thesis - Isolation and Characterisation of Biosurfactant producing marine bacteria**

Dr Pattanathu Rahman (Examiner), Jan Dolfing (Examiner)

12 Jun 2014

**MPhil Thesis (Environmental Technology) - Investigating agronomic and remedial impacts of water treatment wastes and biochar**

Dr Pattanathu Rahman (Examiner)

11 Jun 2014

**PhD Thesis (Environmental Science): Studies on Electro oxidation and electrocatalytic oxidation of reactive dyes using Gadolinium (Gd<sup>3+</sup>), Neodymium (Nd<sup>3+</sup>) and Samarium (Sm<sup>3+</sup>) doped cerium oxide nanoparticles**

Dr Pattanathu Rahman (Examiner)

9 Apr 2014

**BBSRC-CBMNet (Crossing Biological Membrane Network) (External organisation)**

Dr Pattanathu Rahman (Member)

2014 → ...

**Frontiers in Microbiology (Journal)**

Dr Pattanathu Rahman (Guest editor)

2014 → ...

**Siksha 'O' Anusandhan University**

Dr Pattanathu Rahman (Visiting researcher)

2014

**TeeGene Biotech Ltd (External organisation)**

Dr Pattanathu Rahman (Chair)

2014 → ...

**Advances in Biofuels & Biosurfactants - CPD Course**

Dr Pattanathu Rahman (Speaker)

2011

**C. Namasivayam**

Dr Pattanathu Rahman (Host)

2010

**Sustainable Cleaning Products Summit**

Dr Pattanathu Rahman (Speaker)

30 Nov 2006

**Start-up panel discussion: The challenger perspective**

Dr Pattanathu Rahman (Speaker)

31 Aug 0019

## Prizes

**5 minutes with... Dr Pattanathu Rahman, Chairman and Director of TeeGene**

Dr Pattanathu Rahman (Recipient), 7 Apr 2017

**Associate Member of Institution of Chemical Engineers (AMIChemE)**

Dr Pattanathu Rahman (Recipient), 1 Aug 2014

**British Council Biotechnology Mission Delegation to India**

Dr Pattanathu Rahman (Recipient), 1 Mar 2019

**British High Commission Delegation to New Zealand**

Dr Pattanathu Rahman (Recipient), 2016

**Delegation to Thailand**

Maria Olea (Recipient) & Dr Pattanathu Rahman (Recipient), 10 Feb 2010

**Fellow of Royal Society of Arts (FRSA)**

Dr Pattanathu Rahman (Recipient), 2018

**IChemE – Best Business Start-up award (Runner-up)**

Dr Pattanathu Rahman (Recipient), 2015

**Industrial Biotechnology Leadership Forum Award**

Dr Pattanathu Rahman (Recipient), 2015

**Regio Star awards - Innovative support for bio-entrepreneurs (BBEPP - TeeGene Biotech Ltd. Case Study)**

Dr Pattanathu Rahman (Recipient), 16 Oct 2017

**Research Council UK Delegation to India**

Dr Pattanathu Rahman (Recipient), 2016

**Sino-UK Delegation to Wuhan and Beijing (China)**

Dr Pattanathu Rahman (Recipient), 18 Sep 2018

**Teesside University's Enterprise Project of the Year 2016**

Dr Pattanathu Rahman (Recipient), 29 Mar 2016

**iCreate Business Fellowship**

Dr Pattanathu Rahman (Recipient), 20 Nov 2014

## **Projects**

**Biorecycling: Bio-recycling: resource recovery and reduction of oily hazardous wastes via biosurfactant washing and bioremediation**

Dr Pattanathu Rahman & Richard Lord

1/09/05 → 30/09/08

**BioReGen: Biomass, remediation, regeneration (BioReGen): Reusing brownfield sites for renewable energy crops**

Dr Pattanathu Rahman & Richard Lord

1/08/05 → 10/12/10

**BIOSUPER: Biosurfactant production by bacteria**

Dr Pattanathu Rahman

5/06/15 → 31/10/15

**Characterisation of info-chemical induced EPS from Scenedesmus for sustainable production of bioemulsifiers and biosurfactants**

Dr Pattanathu Rahman, Jagroop Pandhal, Claudio Angione & Andrew Beckerman

2/07/17 → 28/02/19

**Condition-specific engineering of Pseudomonas metabolism**

Dr Pattanathu Rahman & Claudio Angione

3/09/16 → 30/03/17

**Establishing a Joint UK-NZ Partnership in Industrial Biotechnology and Bioenergy – Exploiting Algae and marine biomass for IBBE**

Dr Pattanathu Rahman, Saul Purton & Jeff Green

14/08/17 → 17/08/17

**Exploring the biocatalytic pathways of the microbial biosurfactant production from biodiesel industry residual glycerine**

Dr Pattanathu Rahman & Maria Olea

1/05/08 → 1/06/09

**Green synthesis, 2D and 3D organisation of metal nanoparticles from Indian medicinal plants**

Dr Pattanathu Rahman & Sivaraj Rajeshwari

1/02/13 → 30/04/13

**In silico genome-wide modelling and metabolic engineering of Pseudomonas strains for improved rhamnolipid synthesis.**

Dr Pattanathu Rahman & Claudio Angione

1/05/18 → 20/02/19

**Plants as Nanoparticle Producers**

Dr Pattanathu Rahman, Frans Maathuis, Neil C. Bruce & Liz RYLOTT

1/12/15 → 31/08/16

**RECO-BIOSURF: Recovery of Oceanic Biosurfactants to improve carbon uptake to evaluate the global carbon cycle**

Dr Pattanathu Rahman, Dr Keiron Roberts, Dr David Hutchinson, Professor John Williams & Dr Fay Couceiro

29/01/19 → 31/07/20

**Screening microalgae species for waste water phosphate removal/recovery and high value chemicals production (BBSRC-HVCfP - Business Interaction Grant)**

Dr Pattanathu Rahman & Christopher Ennis

1/07/15 → 1/07/16

**TeeGene - A University Spin-out**

Dr Pattanathu Rahman

23/12/14 → ...

**Using waste apples to grow the worm *C. elegans* for biotherapeutic production**

Dr Pattanathu Rahman & David Weinkove

1/10/18 → 31/03/19