

Curriculum Vitae

Anand Jain, PhD Microbiology

Research Scientist
Indian Arctic Programme,
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Research Interests:

- Bacterial diversity and microbial ecology
- Bio-electrochemical systems and bio-energy
- Biofilms and biofouling

Education:

Year	Degree/Board	Institution	Remarks
2009	Ph.D. Microbiology	Goa University, India.	
2003	M.Sc. Microbiology	Maharshi Dayanand Saraswati University (MDS), Ajmer, India	First division 67.3% (Gold Medalist)
2001	B.Sc. Life science	Jai Narayan Vyas (JNV) University, Jodhpur	First division 68.2%
1997	Higher secondary	Central Board of Secondary Education (CBSE), New Delhi, India	First division 75.3% (Distinction)
1995	Senior secondary	Central Board of Secondary Education (CBSE), New Delhi, India	First division 61.2%

Awards & Honors:

- **Quick Hire Fellowship** by CSIR-National Institute of Oceanography, Goa (2011-2014).
- **EMPOWER-Post-doctoral Fellowship** by Irish Research Council for Science, Engineering and Technology (IRCSET), Ireland (2009-2011).
- Fellowship for Doctoral research by Council of Scientific and Industrial Research (CSIR), New Delhi, India (2003-2008).
- **Jagan Bai Maya Devi scholarship** during M.Sc. Microbiology (2001-2003).
- **Gold medal** for standing first in M.Sc. Microbiology from MDS University, Ajmer, India, (2003).
- Qualified **National Eligibility Test (NET)** (2002) as **Junior Research Fellow (JRF)** conducted by CSIR.

Research experience/Positions held:

Position/Designation	Institution	Duration
Research Scientist	National Center for Antarctic and Ocean Research, Goa	2014 to till date
Quick Hire fellow	CSIR-National Institute of Oceanography, Goa	2011 - 2014
IRCSET Post-Doctoral fellow	Dublin City University, Ireland	2009 - 2011
Senior Research Fellow	CSIR-National Institute of Oceanography, Goa	2005 - 2008
Junior Research Fellow	CSIR-National Institute of Oceanography, Goa	2003 - 2005

Research Contributions:

Publications

- **Anand Jain**, Mandar Bandekar, Jasmine Gomes, Damodar Shenoy, Ram Murti Meena, Hema Naik, Rakhee Khandeparkar, N. Ramaiah (2014). *Temporally invariable bacterial community structure in the Arabian Sea oxygen minimum zone*. Aquat Microb Ecol 73: 51-67. **Impact Factor (I.F) 2013 = 1.9.**
- **Anand Jain**, Jack O’Connolly, Robert Woolley, Satheesh Krishnamurthy, Enrico Marsili (2013), *Extracellular electron transfer mechanism in Shewanella loihica PV-4 biofilms formed at Indium tin oxide and graphite electrodes*. Int. J. Electrochem.Sci 8: 1778-1793. **I.F 2013 = 1.95, Citations (Cit) = 5.**
- **Anand Jain**, Xiaoming Zhang, Gabriele Pastorela, Niamh Berry, Jack O’Connolly, Robert Woolley, Satheesh Krishnamurthy, Enrico Marsili (2012), *Electron transfer mechanism in Shewanella loihica PV-4 biofilms formed at graphite electrode*. Bioelectrochemistry 87: 28-32 **I.F 2013 = 3.87, Cit = 19.**
- **Anand Jain***, Enrico Marsili and Nayaran B. Bhosle, (2011). *The biofilm returns: Microbial life at interfaces*. In, Ahmad I, Ahmad F, and Pichtel J (eds). “Microbes and Microbial Technology”, **Springer-verlag, USA**, 59-85, doi: 10.1007/978-1-4419-7931-5_3. (*corresponding author), **Cit = 2.**
- Jack Connolly, **Anand Jain**, Gabriele Pastorela, Satheesh Krishnamurthy, John Paul Mosnier, Enrico Marsili, (2011). *Zinc oxide and indium tin oxide thin films for the growth and characterization of Shewanella loihica PV-4 electroactive biofilms*. Virulence 2 (5). **I.F 2013 = 3.3, Cit = 2.**
- **Anand Jain**, Guilio Gazzola, Aurora Panzera, Michele Zanoni, Enrico Marsili, (2011). *Visible spectroelectrochemical (SEC) characterization of Geobacter sulfurreducens biofilm using optically transparent tin oxide (ITO) electrode*. Electrochimica acta 56: 10776-10785. **I.F 2013 = 4.08, Cit = 38.**

- **Anand Jain*** and Nayaran B. Bhosle, (2009). *Biochemical composition of the marine conditioning film and implication for bacterial adhesion*. **Biofouling** 25 (1):13-19. (*corresponding author) **I.F 2013 = 3.7, Cit = 54.**
- Anita Garg, **Anand Jain** and Nayaran B. Bhosle, (2009). *Chemical characterization of marine conditioning film*. *International Biodeterioration and Biodegradation* 63: 7-11. **I.F 2013 = 2.23, Cit = 17.**
- **Anand Jain*** and Nayaran B. Bhosle, (2008). *Role of β 1-4 linked polymers in biofilm structure of *Pseudomonas* sp CE-2 on 304- stainless steel*. **Biofouling** 24 (4): 283-290. (*corresponding author) **I.F 2013 = 3.7, Cit = 6.**
- **Anand Jain***, Nishad KK and Nayaran B. Bhosle, (2007). *Effect of DNP on cell surface properties of marine bacteria and its implication for adhesion to surfaces*. **Biofouling** 23 (3):1-7. (*corresponding author) **I.F 2013 = 3.7, Cit = 18.**

Manuscripts under review:

- **Anand Jain**, Mandar Bandekar, Jasmine Gomes, Ram Murti Meena, N.Ramaiah* (2014). *Response of Polar front phytoplankton and bacterial community to micronutrient amendments*. (Deep Sea Research Part-II)
- N.Ramaiah*, **Anand Jain**, Ram Murti Meena, Ravidas K Naik, Rishendra Verma, Mithila Bhat, Analia Mesquita, Akshita Nadkarni, Stecy Elvira D'Souza, Tufail Ahmed, Mandar Bandekar, Jasmine Gomes (2014). *Response of bacteria and phytoplankton from a subtropical front location Southern Ocean to micronutrient amendments ex-situ*. (Deep Sea Research Part-II)

Manuscript under preparation:

- **Anand Jain**, Ram Murti Meena, P Sabu, Ravidas K Naik, Jasmine Gomes, Mandar Bandekar, Mithila Bhat, Analia Mesquita, Anil Kumar, Nagappa Ramaiah (2015). *Invariable/Stable bacterial community structure inside and outside of a cyclonic eddy in the subtropical front of Indian sector of Southern Ocean*.
- Mandar Bandekar, **Anand Jain**, Ram Murti Meena, N. Ramaiah (2015). *Bacterial diversity in Oxygen Minimum Zone of the Arabian*.

Other research reports/thesis:

- **Anand Jain**, (2011). *Spectroelectrochemical characterization and electron transfer mechanism in electroactive biofilms*. IRCSET-EMPOWER post-doctoral fellowship report, IRCSET, Ireland.
- **Anand Jain**, (2009). *Bacterial biofilms on non-living surfaces immersed in marine waters*. Ph.D. thesis, Goa University, Goa (India), **Cit = 1.**

- **Anand Jain**, (2003). *Bioaccumulation of calcium and fluoride by Aulosira prolifica*. M.Sc. dissertation thesis, MDS University, Ajmer (India).

Performance indicator:

Total Refereed publications*	9
Chapter in edited book	1
Abstract submitted in conference	8
Citations*	160
H index *	6
i10 index*	5
Total impact factor **	28.43
Average impact factor	3.15

*As per Google scholar

**As per 2013 impact factor list

Abstract submitted in conferences:

- **Anand Jain**, Xiaoming Zhang, Yujing Liu, Dina Fattakchora Rohlfing, Enrico Marsili, (2011). *Beyond graphite: novel nanostructured interfaces for electroactive biofilms characterization*. **Society for Industrial Microbiology Annual Meeting and Exhibition**, Sheraton New Orleans, LA, USA, (24-28 July, 2011).
- **Anand Jain**, Gabriele Pastorella, Niamh Barry, Yujing Liu, Dina Fattakhova-Rohlfing, Enrico Marsili, (2011). *Nano-porous indium tin oxide electrodes for enhanced current generation by *Shewanella loihica* PV-4 biofilms*. **XXI International Symposium on Bioelectrochemistry and Bioenergetics**, Cracow, Poland, (8-12 May, 2011).
- Jack Connolly, **Anand Jain**, Guilio Gazzola, Satheesh Krishnamurthy, Enrico Marsili, John Paul Mosnier, (2010). *Zinc oxide and indium tin oxide thin films for the growth and characterization of electroactive biofilms*. **European Materials Research Society**, (7- 11 July, 2010).
- **Anand Jain** and Enrico Marsili, (2010). *Spectroelectrochemistry of electroactive biofilm*. 61st Annual meeting of **International Society of Electrochemistry**, Nice, France (26 September-1 Aug, 2010).
- **Anand Jain** and Nayaran B. Bhosle, (2008). *Effect of carbohydrates and uronic acid in marine conditioning film on bacterial adhesion*. **Society of Environmental Toxicology and Chemistry** world congress Sydney, Australia (3 - 7 Aug, 2008).
- **Anand Jain** and Nayaran B. Bhosle, (2008). *Role of β 1-4 linked polymers in biofilm structure of *Pseudomonas* sp CE-2*. **International conference on biofouling and ballast water management** at NIO, Dona Paula, Goa (5 - 7 Feb, 2008).
- **Anand Jain**, Nishad KK and Nayaran B. Bhosle, (2006). *Effect of DNP on cell surface properties of marine bacteria and its implication for adhesion to surfaces*. International

conference on **Recent advances in marine antifouling technologies** at National Institute of Ocean technology (NIOT), Chennai (6 - 8 Dec, 2006).

- **Anand Jain** and Nayaran B. Bhosle, (2004). *Effect of exopolysaccharide oxidation and metabolic inhibition on the adhesion and biofilm formation by marine Pseudomonas sp.* **Conference on microbiology of the tropical seas** at NIO, Dona Paula, Goa (13 - 15 Dec, 2004).

Memberships:

- **International society of electrochemistry**, Switzerland (2009-2012).
- **Biological Research Society**, Dublin City University, Ireland (2010-2012).
- **Microcenocs**, MDS University, India (life time).

Workshop/training program attended:

- **Q-T0F/LC/MS small molecule analysis training** at Agilent technologies. Inc, USA (22-26 April, 2013).
- **ASEAN-India Marine biotechnology workshop**. Oral presentation titled “*Bioinspired Antifouling technologies*” at National Institute of Oceanography, Goa (19-22 March, 2013)
- **National workshop on Bioinformatics: sequence and genome analysis**. Birla Institute of Scientific Research, Jaipur (8-10 Dec, 2011)

Research Cruise/ field work experience:

- 15 days on-board ORV Sagar kanya (SK-294, **Part of on-going SIBER program**), involving collection of seawater samples for metagenomic analysis.
- Principal Investigator in **7th Indian Southern Ocean Expedition 2013** in ice free Antarctic water (11 Jan, 2013 to 26 Feb, 2013).

Students advised/co-advised:

- M.Sc Biotechnology, Dublin City University, Ireland. Electrochemical characterization of *Shewanella loihica* PV-4 biofilms (2011).
- M.Sc Chemical Engineering, University of Rome “La Sapienza”, Italy. Spectroelectrochemistry of electroactive biofilms using optically transparent electrode (2009-2010).
- M.Sc Biotechnology, Goa University. Isolation and characterization of quorum sensing positive, Gram negative bacteria from boat hull (2008).
- M.Sc Biotechnology, Banasthali University. Isolation and detection of novel quorum sensing molecules using GC-MS (2008).
- M.Sc Biotechnology. The development of biofilms on solid surface, by Mr. Sushilkumar D. Ramdasi six months project (2007).

- M.Sc Microbiology. Extracellular Factors affecting Biofilm formation, by Arpan Bagchi, six months project (2007).
- M.Sc Microbiology. Effects of DNP on cell surface properties, EPS production and bacterial attachment to surfaces, by Nishad K.K, six months project (2006).
- B. Tech Biotechnology, Shivaji University. Continuous Flow Biofilm Reactor Study of CE-2 (2007).
- B. Tech Biotechnology, Shivaji University. Effect of Furanone & Homoserine Lactone on biofilm of CE-2 (2007).
- B. Tech Biotechnology, Shivaji University. Isolation of EPS from Biofilm and Planktonic Cells (2007).
- B.Tech Biotechnology, Government College of Technology (2007), Tamil Nadu. Lectin binding analysis of *Pseudomonas* sp CE - 2 biofilm on Glass Coupons

Reviewer in Journals:

- African Journal of Microbiology Research
- African Journal of biotechnology
- Biofouling
- Central European Journal of Biology

Technical Expertise:

- Total bacterial count, Viral count
- Denaturing gradient gel electrophoresis-polymerase chain reaction (DGGE –PCR)
- Anaerobic cultures handling and maintenance
- Bioelectrochemical cell (three electrode systems)
- Electrochemical methods (Cyclic voltammetry, differential pulse voltammetry, chronoamperometry)
- Visible spectroelectrochemistry
- Isolation and biochemical characterization of the bacterial isolates
- Biofilm formation assay (microplate assay and CDC biofilm reactor system), biofilm quantification assays (viable cell count and total bacterial count)
- Exopolymeric substances (EPS) extraction and quantification
- Epifluorescent microscopy, scanning electron microscopy, confocal microscopy and image analysis software (Image pro-plus 6.1)
- Analytical techniques such as UV-VIS spectroscopy, fluorescence spectroscopy, Gas Chromatography (GC), and Gas Chromatography- Mass spectrometry (GC-MS)
- Statistical methods (ANOVA, AN-COVA, linear regression analysis, backward multiple regression analysis, and student t-test)
- Software knowledge (PRIMER-v6; MVSP, Image-pro, Quantity-one, MEGA-5, CLUSTAL X, MOTSUR)

Personal Information:

- **Nationality:** Indian
- **Date of birth:** Dec 12, 1979
- **Marital status:** Married
- **Gender:** Male
- **Father's name:** Mr Sheel Chand Jain
- **Mother's name:** Mrs Puspa Jain
- **Languages proficiency:** English, Hindi

References:

- **Dr. N.B.Bhosle**
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National Institute of Oceanography, Dona Paula, Goa, India.
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- **Dr. N.Ramaiah**
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- **Dr Enrico Marsili**
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Declaration

- I the undersigned certify that to the best of my knowledge and belief this CV correctly describes my qualification and me.