Curriculum Vitae

Anand Jain, PhD Microbiology
Project Scientist-B
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	Division/Percentage
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%

Career Record:

- **Project Scientist B,** ESSO-National Center for Antarctic and Ocean Research, 2014 to till date
- **Quick Hire fellow,** CSIR-National Institute of Oceanography, 2011 – 2014
- **IRCSET Post-Doctoral fellow,** Dublin City University, Ireland, 2009 - 2011
- **Senior Research Fellow** CSIR-National Institute of Oceanography, 2005 - 2008
- **Junior Research Fellow** CSIR-National Institute of Oceanography, 2003 - 2005

Research Contributions:

Publications in refereed journals

1. 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 **(2015).** *Response of bacteria and phytoplankton from a subtropical front location Southern Ocean to micronutrient amendments ex-situ.* Deep Sea Research Part-II 118, Part B : 209–220. **Impact Factor (I.F) = 2.190, Citations (Cit) = 1**

2. **Anand Jain,** Mandar Bandekar, Jasmine Gomes, Ram Murti Meena, N.Ramaiah **(2015).** *Response of Polar front phytoplankton and bacterial community to micronutrient amendments*. Deep Sea Research Part-II 118, Part B: 197–208. **I.F = 2.190, Cit = 3**.

3. **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. **I.F = 1.967, Cit = 1**

4. **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 = 1.5, Cit = 7**.

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 = 4.172**, **Cit = 22.**

6. 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 = 4.216, Cit = 2.**

7. **Anand Jain**, Guilio Gazzola, Aurora Panzera, Michele Zanoni, Enrico Marsili, **(2011)**. *Visible spectroelectrochemcial (SEC) characterization of Geobacter sulfurreducens biofilm using optically transparent tin oxide (ITO) electrode.* Electrochemcia acta 56: 10776-10785. **I.F = 4.086, Cit = 41.**

8. **Anand Jain*** and Nayaran B. Bhosle, **(2009).** *Biochemical composition of the marine conditioning film and implication for bacterial adhesion.* **Biofouling** 25 (1):13-19. (***First and corresponding author) I.F = 3.415**, **Cit = 63.**

9. Anita Garg, **Anand Jain** and Nayaran B. Bhosle, **(2009)**. *Chemical characterization of marine conditioning film.* International Biodeterioration and Biodegradation 63: 7-11. **I.F = 2.131**, **Cit = 23.**

10. **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. (***First and corresponding author) I.F = 3.415**, **Cit =6.**

11. **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. **(*First and corresponding author) I.F = 3.415**, **Cit = 18.**

Book chapter

1. **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. (***First and corresponding author)**, **Cit = 2.**

Performance indicator:

Total Refereed publications*	11
Chapter in edited book	1
Abstract submitted in conference	8
Citations*	**200**
H index *	**6**
i10 index*	**5**
Total impact factor **	**~ 32**
Average impact factor	**3.0**

*As per Google scholar
**As per 2013 impact factor list

Manuscripts under preparation:

1. **Anand Jain**, Ram Murti Meena, P Sabu, Ravidas K Naik, Jasmine Gomes, Mandar Bandekar, Mithila Bhat, Analia Mesquita, Anil Kumar, Nagappa Ramaiah (2015). *Bacterial community structure inside and outside of a cyclonic eddy in the subtropical front of the Indian sector of the Southern Ocean.*

2. Mandar Bandekar, **Anand Jain**, Ram Murti Meena, N. Ramaiah (2015). *16S rRNA based bacterial diversity in the Oxygen Minimum Zone of the Arabian Sea.*

Other research reports/thesis:

1. **Anand Jain,** (2011). *Spectroelectrochemcial characterization and electron transfer mechanism in electroactive biofilms.* IRCSET-EMPOWER post-doctoral fellowship report, IRCSET, Ireland.
2. **Anand Jain**, (2009). *Bacterial biofilms on non-living surfaces immersed in marine waters*. Ph.D. thesis, Goa University, Goa (India), **Cit = 1**.
3. **Anand Jain,** (2003). *Bioaccumulation of calcium and fluoride by Aulosira prolifica.* M.Sc. dissertation thesis, MDS University, Ajmer (India).

Abstract submitted in conferences:

1. **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).
2. **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).
3. 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).
4. **Anand Jain** and Enrico Marsili, **(2010)**. *Spectroelectrochemistry of electroactive biofilm.* 61 st Annual meeting of **International Society of Electrochemistry**, Nice, France (26 Aug -1September, 2010).
5. **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).
6. **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).
7. **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).
8. **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).

Awards and Fellowships:

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

Memberships:

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

Workshop/training program attended:

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

Research Cruise/ field work experience:

1. Participated in **Indian Arctic expedition 2015** (27 June, 2015 to 23 July 2015).
2. Principal Investigator in **7th Indian Southern Ocean Expedition 2013** in ice free Antarctic water (11 Jan, 2013 to 26 Feb, 2013).
3. Participated in ORV Sagar kanya cruise (SK-294) as a part of **SIBER program** (1 June to 13 June 2012).

Student's advised/co-advised:

1. M.Sc Biotechnology, Dublin City University, Ireland. Electrochemical characterization of *Shewanella loihica* PV-4 biofilms (2011).
2. M.Sc Chemical Engineering, University of Rome "La Sapienza", Italy. Spectroelectrochemcistry of electroactive biofilms using optically transparent electrode (2009-2010).
3. M.Sc Biotechnology, Goa University. Isolation and characterization of quorum sensing positive, Gram negative bacteria from boat hull (2008).

4. M.Sc Biotechnology, Banasthali University. Isolation and detection of novel quorum sensing molecules using GC-MS (2008).
5. M.Sc Biotechnology. The development of biofilms on solid surface, by Mr. Sushilkumar D. Ramdasi six months project (2007).
6. M.Sc Microbiology. Extracellular Factors affecting Biofilm formation, by Arpan Bagchi, six months project (2007).
7. 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).
8. B. Tech Biotechnology, Shivaji University. Continuous Flow Biofilm Reactor Study of CE-2 (2007).
9. B. Tech Biotechnology, Shivaji University. Effect of Furanone & Homoserine Lactone on biofilm of CE-2 (2007).
10. B. Tech Biotechnology, Shivaji University. Isolation of EPS from Biofilm and Planktonic Cells (2007).
11. B.Tech Biotechnology, Government College of Technology, Tamil Nadu. Lectin binding analysis of *Pseudomonas* sp CE - 2 biofilm on Glass Coupons (2007).

Reviewer in Journals:

1. African Journal of Microbiology Research
2. African Journal of biotechnology
3. Biofouling
4. Central European Journal of Biology

Technical Expertise:

1. Total bacterial count, Viral count
2. Denaturing gradient gel electrophoresis-polymerase chain reaction (DGGE –PCR)
3. Anaerobic cultures handling and maintenance
4. Bioelectrochemcial cell (three electrode systems)
5. Electrochemical methods (Cyclic voltammetry, differential pulse voltammetry, chronoamperometry)
6. Visible-spectroelectrochemistry
7. Isolation and biochemical characterization of the bacterial isolates
8. Biofilm formation assay (microplate assay and CDC biofilm reactor system), biofilm quantification assays (viable cell count and total bacterial count)
9. Exopolymeric substances (EPS) extraction and quantification
10. Epifluorescent microscopy, scanning electron microscopy, confocal microscopy and image analysis software (Image pro-plus 6.1)
11. Analytical techniques such as UV-VIS spectroscopy, fluorescence spectroscopy, Gas Chromatography (GC), and Gas Chromatography- Mass spectrometry (GC-MS)

12. Statistical methods (ANOVA, AN-COVA, linear regression analysis, backward multiple regression analysis, and student t-test)
13. Software knowledge (PRIMER-v6; MVSP, Image-pro, Quantity-one, MEGA-5, CLUSTAL X, MOTHUR)

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**
  Retried scientist
  Marine Corrosion and Material Research Division,
  National Institute of Oceanography, Dona Paula, Goa, India.
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  Phone: + 91 (0) 832 2449 214 (Home)

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  Chief Scientist
  Biological Oceanography Division,
  National Institute of Oceanography, Dona Paula, Goa, India.
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- **Dr Enrico Marsili**
  Visiting Assistant Professor
  Singapore Centre on Environmental Life Science Engineering (SCELSE)
  Nanyang Technological University,
  Singapore
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  School of Biotechnology,
  Dublin City University,
  Dublin-9, Ireland
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  Phone: 00353 700 8515

Declaration

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