

CV of Venkata Nancharaiah Yarlagadda

Name: Dr. Venkata Nancharaiah Yarlagadda

Work affiliation:

Scientific Officer G & Group Leader
Biofouling and Biofilm Processes,
Bhabha Atomic Research Centre (BARC),
Kalpakkam - 603102, Tamil Nadu, India.
Email: yvn@igcar.gov.in; venkatany@gmail.com
Phone:+9144 27480203; Fax:+914427480097



AND

Associate Professor
Homi Bhabha National Institute
Anushakti Nagar, Mumbai, India

Research Interests

- Structure and function of microbial communities, bioremediation, biological wastewater treatment; biological nutrient removal
- Aerobic granular biomass technology for sewage and industrial wastewater treatment
- Development of microbial technologies based on anaerobic and aerobic microbial metabolism for waste treatment and resource recovery
- Microbial biofilm - metal(loid) interactions
- Biofouling in cooling water systems of nuclear power plants; Biofilm control using ionic liquids

Academic Qualifications

[Bhabha Atomic Research Centre & University of Madras | India](#)

2003 - 2009 | PhD

- Thesis: Generation and applications of aerobic granular sludge biofilms in environmental biotechnology
- Supervisor: Dr. V. P. Venugopalan, BARC, India
- Thesis awarded in July 2009

[Andhra University | India](#)

1991 - 1993 | Master of Science in Biochemistry

- Department of Biochemistry, Visakhapatnam
- Thesis: Antimicrobial compounds from marine bacteria

[Nagarjuna University | India](#)

1987 - 1990 | Bachelor of Science

- Equal weightage to Chemistry, Botany & Zoology

Career History (short)

2014 - present	:Scientific Officer G, Biofouling & Biofilm Processes Section, WSCD, Bhabha Atomic Research Centre, Kalpakkam, India
2012 - present	:Associate professor, HBNI, Mumbai
January 210-December 2015	:Marie Curie Senior Researcher Fellow, UNESCO-IHE, The Netherlands
October 2010- December 2010	:Indo-US Research Fellow, Arizona State University, USA
October 2009-January 2010	:ASM (American Society for Microbiology) visiting research professor, Brookhaven National Laboratory, USA
July 2009-June 2014	:Scientific Officer F, Biofouling & Biofilm Processes Section, WSCD, Bhabha Atomic Research Centre, Kalpakkam, India
July 2003-June 2009	:Scientific Officer E, Biofouling & Biofilm Processes Section, WSCD, Bhabha Atomic Research Centre, Kalpakkam, India
August 2001-June 2002	:Guest Scientist, Technical University of Munich, Germany
July 1995-June 1998	:Scientific Officer C, Biofouling & Biofilm Processes Section, WSCD, Bhabha Atomic Research Centre, Kalpakkam, India
July 1994-June 1995	:Scientific Officer (Trainee), Bhabha Atomic Research Centre Training School, Mumbai, India

Career History (detailed)

July 2014 - present, Scientific Officer G
Bhabha Atomic Research Centre | India

- Fermentative metabolism of granular biomass. Bioreduction of palladium by granular sludge.
- Developed aerobic granular sludge for biodegradation of organosphosphorous compounds (i.e. tributyl phosphate, dibutyl hydrogen phosphate) of relevance to nuclear industry.
- Developed anoxic granular sludge sequencing batch reactors for denitrification of high strength nitrates.
- Biological reduction of selenium, tellurium, and chromium oxyanions in aerobic granular biomass sequencing batch reactors.

- Development of novel ammonium nitrogen removal and enhanced biological phosphorus removal in aerobic granular biomass reactors.
- Pilot scale aerobic granular biomass sequencing batch reactors for sewage treatment.
- Novel hybrid biofilm-granules for low strength wastewaters
- Biohydrometallurgy for recovery of scarce elements
- Biological treatment of nitrate bearing waters generated in nuclear fuel fabrication and spent fuel reprocessing facilities
- Antimicrobial ionic liquids
- Mentoring 3 Ph.D. students
- Supervising 2 Ph.D. students

January 2014 - December 2015, Senior Researcher (Marie Curie)
UNESCO - IHE | The Netherlands

- Microbial transformation of selenium and tellurium oxyanions in upflow anaerobic sludge blanket reactor.
- Mechanisms of microbial synthesis of elemental selenium and metal selenide nanomaterials.
- Role of redox mediators and biofilm matrix components in microbial reduction of metalloids oxyanions.
- Removal of selenium and ammonium by activated sludge in sequencing batch reactors
- Bioremediation of seleniferous soils
- Microbial synthesis of bimetal(oid) nanomaterials
- Research execution
- Mentored 3 Ph.D. students and 1 MSc student

October 2010 - December 2010, Indo US Research Fellow
Arizona State University | USA

- Host scientist: Dr. Bruce E. Rittmann, Distinguished Professor
- A grant proposal was prepared; the proposal was selected and funded for 12 months duration by Indo-US Science and Technology Forum and Department of Science and Technology.
- Nature of funding: salary, travel, consumables, conferences.
- Anaerobic metabolism in metal respiring bacteria. Research carried out on structure of mixed species biofilms formed on graphite anodes of microbial electrolysis cells.
- Used selective staining and confocal laser scanning microscope (CLSM) for biofilm visualization.

October 2009 - January 2010, American Society for Microbiology (ASM) Visiting Professor
Brookhaven National Laboratory | USA

- Host scientist: Dr. A.J. Francis, Scientist Emeritus
- I prepared a grant proposal for studying the role of exogenous electron shuttles on fermentative metabolism of *Clostridium* sp. and submitted to American Society for

Microbiology (ASM), USA. The proposal was funded through ASM Visiting Research Professorship Award. The award included travel and relocation.

- Brookhaven National Laboratory covered salary, accommodation and research expenses.
- Microbial fermentation pathways and influence of redox mediators on fermentative metabolism
- Insight into fermentative metabolism was obtained. Investigated the effect of redox mediators on growth and fermentative metabolism of *Clostridium* sp.
- Determined the effect of selected ionic liquids on the growth and fermentative metabolism of *Clostridium* sp. as part of a larger project on biofuels from lignocellulosic biomass.
- Bioreduction of Cr(VI) to Cr(III) by mixed microbial granules was determined. Cr(VI) removal by aerobic granular sludge biofilms was determined under aerobic and anaerobic conditions. X-ray absorption spectroscopy techniques (XANES, EXAFS) were used for solid-phase speciation of Cr-laden granular biofilms.
- Skills on anaerobic microbiology were obtained.
- Mentored 1 PhD student.

July 2009 - January 2014, Scientific Officer F
Bhabha Atomic Research Centre (BARC) | India

I was the co-investigator in the following two projects:

- Development of advanced methods for determining chlorination-induced cellular damage in microalgal cells. A single cell level method based on dual fluorescence imaging was developed for quantifying chlorination-induced cellular damage in microalgal cells. Chlorophyll fluorescence volume was quantified as mean fluorescence intensity per cell and related to chlorine dose.
- Isolation of antibiofilm compounds from marine bacteria from Indian Ocean. Antibacterial compounds were isolated from selected marine epibiotic bacteria, their antibiofilm activity was determined against defined bacterial and fungal cultures. Active compounds were purified and characterized.
- Establishment of anaerobic microbiology laboratory
- Mentored 2 Ph.D. students

July 2003 - June 2009, Scientific Officer E
Bhabha Atomic Research Centre (BARC) | India

- Ph.D. work: For doctoral thesis, I worked on development and characterization of aerobic granular sludge biofilms for biodegradation of recalcitrant and toxic xenobiotics. I setup laboratory scale column type reactors and operated in sequencing batch mode for granulation. Granular biofilms were engineered under different growth conditions, by feeding xenobiotic as sole and co-substrate. Aerobic granular sludge was developed successfully for biodegradation of organics of importance (e.g. nitrilotriacetic acid, tributyl phosphate, dibutyl hydrogen phosphate, *p*-nitrophenol) to nuclear industry. The role of reactor operating conditions on granulation was

investigated and it was found that aerobic starvation triggers aggregation in bacteria. Biosorption of chromium (VI), uranium (VI) by aerobic granular sludge biofilms was determined in batch experiments. Selective staining and confocal microscopy were used for visualization of cells, and biofilm-matrix components. Skills were developed to apply various molecular biology methods (e.g. PCR, DGGE), confocal microscopy, and other methods. PCR-DGGE was used for fingerprinting of aerobic granular sludge biofilms developed under different growth and reactor conditions. Supervisor: Dr. V. P. Venugopalan, BARC, Kalpakkam.

- Procurement and establishment of microbiology and molecular biology labs
- Procurement and maintenance of confocal laser scanning microscope (Leica TCS SP2)

August 2001 - June 2002, Guest Scientist
Technical University of Munich | Germany

- Host scientist: Prof. Dr. Peter A. Wilderer (winner of Stockholm Water Prize 2003)
- Developed a method for monitoring horizontal gene transfer (TOL plasmid transfer) in situ in biofilms.
- Investigated bioaugmentation in a sequencing batch biofilm reactor; Improved biodegradation of benzyl alcohol was linked to conjugative plasmid transfer in biofilms.
- A dual fluorescence staining method was developed for determining biofilm structure of *Pseudomonas putida* grown in flow cells.
- Hands on experience on the application of confocal laser scanning microscope and flow cell reactors for studying biofilm structure and function was obtained.
- Experience on setting up and operation of sequencing batch biofilm reactors and sequencing batch reactors was gained.

July 1998 - June 2003, Scientific Officer D
Bhabha Atomic Research Centre (BARC) | India

- Biofouling control in cooling water systems of nuclear power plants.
- Evaluation of biocides for macrofouling control
- Impact of power plant chlorination on biofilm formation and marine phytoplankton

July 1995 - June 1998, Scientific Officer C
Bhabha Atomic Research Centre (BARC) | India

- I was involved in a project on biofouling and its control in nuclear power plant cooling water systems. Biofilm formation on condenser materials (titanium, cupronickel) in industrial cooling water systems of nuclear power plants was characterized. Potential biofilm forming bacteria were identified. Influence of biocides and surfactants on biofilm mitigation in cooling water systems was studied

July 1994 - June 1995, Scientific Trainee
Bhabha Atomic Research Centre (BARC) Training School | India

- One year orientation programme in biology and radiobiology

Skills

- Experimental design for exploring aerobic and anaerobic microbial metabolism
- Microbiology, microbial biochemistry, environmental microbiology & biotechnology, wastewater treatment, metal(loid)-microbe interactions, resource recovery
- Microscopy: fluorescence and confocal laser scanning microscope
- Microbial community: FISH, 16S rRNA gene sequencing for isolates, PCR-DGGE for community fingerprinting, analysis of samples by NGS based on Illumina MiSeq platform
- Analytical methods: spectrophotometry, HPLC, GC, IC, TOC etc.
- Writing technical reports & manuscripts
- Teaching basic biochemistry, environmental microbiology & biotechnology, wastewater treatment, resource recovery
- Supervision and mentoring of staff, master and graduate-students

International collaboration

- Prof. Piet N.L. Lens, UNESCO-IHE: Removal of Se, and Te oxyanions in upflow anaerobic granular sludge bed reactors. Removal of metal(loid) oxyanions and biological nutrient removal in granular sludge sequencing batch reactor with alternating anaerobic-aerobic conditions.
- Prof. Bruce E. Rittman, Arizona State University: Investigated structure of multi-species microbial biofilms formed on an anode of microbial electrolysis cells fed with synthetic wastewater. Spatio-temporal aspects of biofilm formation on graphite anode were determined using selective staining and confocal laser scanning microscopy.
- Dr. A. J. Francis, Brookhaven National Laboratory: Investigated the effect of exogenous electron shuttles and ionic liquids on growth and fermentative metabolism of *Clostridium* sp. BC1. Investigated chromium removal and reduction by aerobic granular sludge biofilms. Speciation of Cr-laden granular biomass was determined using X-ray absorption spectroscopic tools such as XANES and EXAFS.
- Prof. Peter A. Wilderer & Prof. Martina Hausner, Technical University of Munich: Developed an in situ method for monitoring TOL plasmid transfer to wastewater biofilm-bacteria for enhanced xenobiotic degradation using in situ methods by based on fluorescent proteins and confocal laser scanning microscopic imaging. *Pseudomonas putida* was dually tagged with DsRed gene on the chromosome and transformed with gfp-tagged TOL plasmid. Dual labelled strain was constructed and used for monitoring the plasmid transfer to uncultivable bacteria and to localize donor cell integration and distribution within the biofilms during bioaugmentation.

Technologies developed

- Aerobic granular biomass technology for treatment of organophosphorus, organonitrile, high strength ammonium and nitrate-laden wastewaters
- Simultaneous removal of Se and Te oxyanions and ammonium-nitrogen in granular

biomass reactors

- Hybrid biofilm-granules system for treating low-strength wastewaters like sewage
- Granular biomass technology for treatment of high strength nitrate-containing industrial effluents generated in nuclear fuel cycle operations
- Ionic liquid based formulations for controlling microbial growth and biofilms

Fellowships & awards

- 2016 Best paper award in Asia-Pacific category at 8th International Conference on Marine Pollution and Ecotoxicology held during 20-24 June 2016, Hong Kong.
- 2012 European Union Marie Curie International Incoming Fellowship - Experienced Researcher
- 2010 Indo-US Research Fellow Award (National level grant application; Screening and selection by Indo-US Science and Technology Forum, New Delhi)
- 2009 Indo-US American Society for Microbiology (ASM) Visiting Research Professorship Award (National level grant application; selection was done in USA by ASM)
- 1994 Selected for Admission to Ph.D. in Indian Institute of Technology Madras (IIT-M) (Not availed and opted for Job in BARC)
- 1993 Qualified National Eligibility Test (NET) in Life Sciences for the award of junior research fellowship (JRF) and eligibility for lectureship (National level competitive exam conducted by CSIR) (Not availed and opted for a Job in BARC)
- Qualified Graduate Aptitude Test of Engineering (GATE) in Life Sciences (February 1993) for the award of junior research fellowship (National level competitive exam conducted by Indian Institute of Technology (IIT), New Delhi) (Not availed)
- 2010 Best paper award at "National Conference on Nanomaterials and Nanotechnology", VNIT, Nagpur
- 2008 Best paper award at "International seminar on biofouling and ballast water management", Goa, India

Membership of scientific societies

- Life member - Biotechnology Research Society of India
- Life member – Association for waste management and remediation of environment, India
- Life member - Society for Advancement of Chemical Sciences and Education, India
- Annual member (2009 – 2010) – American Society for Microbiology, USA

Reviewer for research proposals

- reviewed grant proposal for foundation for polish science (Poland)
- reviewed grant proposals for DAE-BRNS (Mumbai) in basic life sciences
- reviewed grant proposals for DST-SERB (New Delhi)

Reviewer for journals

- Bioresource Technology, Applied Biochemistry and Biotechnology, RSC Advances, Chemosphere, Biofouling, Water Research, Environmental Science and Technology, Journal of Environmental Monitoring, Renewable Energy, Water Science and Technology, Geomicrobiology Journal, Applied and Environmental Microbiology, Desalination and water treatment, Frontiers in Microbiology, Trends in Biotechnology, Environmental and Ecotoxicological Safety, Journal of Microbiology, ChemistrySelect, Environmental Technology,

Organisation of conferences

- G16 conference 28 - 30 May 2015 on International Conference on Chalocogen Science and Technology at UNESCO-IHE, Delft, The Netherlands. I was an active member of local organizing committee and international scientific committee for organizing this conference.

List of journal publications of Venkata Nancharaiah Yarlagadda

Journal publications

- Nancharaiah Y.V., Sarvajith, M., Lens, P.N.L., Selenite reduction and ammoniacal nitrogen removal in aerobic granular sludge reactor. **Water Research** (Under review).
- Kiran Kumar Reddy, G., Nancharaiah, Y.V., Sustainable reduction of toxic-levels of chromate in a denitrifying granular sludge reactor. **Environmental Science and Pollution Research** (Under review).
- Wadgaonkar, S.L., Nancharaiah, Y.V., Esposito, G., Lens, P.N.L., Environmental impact and bioremediation of seleniferous soils and sediments. **Critical Reviews in Biotechnology** (Under review).
- Sarvajith, M., Kiran Kumar Reddy, G., Nancharaiah, Y.V., Textile dye biodecolourization and ammonium nitrogen removal in aerobic granular biomass sequencing batch reactors. *Journal of Hazardous Materials* (In revision).
- Kiran Kumar Reddy, G., Nancharaiah, Y.V., Venugopalan, V.P., Long alkyl-chain imidazolium ionic liquids: antibiofilm activity against phototrophic biofilms. **Colloids and Surfaces B: Biointerfaces** 2017, 155, 487 - 496.
- Venkatnarayanan, S., Sriyutha Murthy, P., Nancharaiah, Y.V., Kirubakaran, R., Venugopalan, V.P., 2017. Power-plant chlorination induced damage and recovery in marine diatoms by SYTOX® Green staining. **Marine Pollution Bulletin** 2017, <http://dx.doi.org/10.1016/j.marpolbul.2016.12.059>.
- Mal, J., Nancharaiah, Y.V., van Hullebusch, E.D., Lens, P.N.L. Biosynthesis of CdSe nanoparticles by anaerobic granular sludge. **Environmental Science: Nano** 2017, 4, 824-833.
- Mal, J., Nancharaiah, Y.V., van Hullebusch, E.D., Lens, P.N.L. Continuous removal and

- recovery of tellurium in an upflow anaerobic granular sludge bed (UASB) reactor. **Journal of Hazardous Materials** 2017, 327, 79-88.
- Mal, J., Nancharaiah, Y.V., van Hullebusch, E.D., Lens, P.N.L. Biological removal of selenate and ammonium by activated sludge in a sequencing batch reactor. **Bioresource Technology** 2017, 229, 11-19.
- Mal, J., Veneman, W.J., Nancharaiah, Y.V., van Hullebusch, E.D., Peijnenburg, W.J., Vijver, M.G., Lens, P.N.L., A comparison of fate and toxicity of biogenic nano-selenium to zebrafish embryos with selenite and chemically synthesized nano-selenium. **Nanotoxicology** 2017, 11(1), 87-97.
- Nancharaiah, Y.V., Krishna Mohan, T.V., Satya Sai, P. M., Venugopalan, V.P. Denitrification of high strength nitrate bearing acidic waters in granular sludge sequencing batch reactors. **International Biodeterioration & Biodegradation** 2017, 119, 28 - 36.
- Kiran Kumar Reddy, G., Sarvajith, M., Nancharaiah, Y.V., Venugopalan, V.P. 2,4-Dinitrotoluene removal in aerobic granular biomass sequencing batch reactors. **International Biodeterioration & Biodegradation** 2017, 119, 56-65.
- Mal, J., Nancharaiah, Y.V., van Hullebusch, E.D., Lens, P.N.L. Metal Chalcogenide quantum dots: biotechnological synthesis and applications. **RSC Advances** 2016, 6, 41477-41495.
- Tan, L.C., Nancharaiah, Y.V., van Hullebusch, E.D., Lens, P.N.L. Selenium: environmental significance, pollution, and biological treatment technologies. **Biotechnology Advances** 2016, 34(5), 886-907.
- Kiran Kumar Reddy, G., Nancharaiah, Y.V., Krishna Mohan, T.V. Bioreduction of [Co(III)-EDTA]⁻ by denitrifying granular biofilms. **Chemical Engineering & Technology** 2016, DOI: 10.1002/ceat.201500488.
- Nancharaiah, Y.V., Venkata Mohan, S., Lens, P.N.L. Recent advances in nutrient removal and recovery in biological and bioelectrochemical systems. **Bioresource Technology** 2016, 215, 173-185.
- Mal, J., Nancharaiah, Y.V., van Hullebusch, E.D., Lens, P.N.L. Effect of heavy metal co-contaminants on selenite bioreduction by anaerobic granular sludge. **Bioresource Technology** 2016, 206, 1-8.
- Krishna Mohan, T.V., Nancharaiah, Y.V., Satya Sai, P.M., Venugopalan, V.P. Effect of C/N ratio on denitrification of high-strength nitrate wastewater in anoxic granular sludge sequencing batch reactors. **Ecological Engineering** 2016, 91, 441-448.
- Nancharaiah, Y.V., Venkata Mohan, S., Lens, P.N.L. Biological and bioelectrochemical recovery of critical and scarce metals. **Trends in Biotechnology** 2016, 34(2), 137-155.
- Krishna Mohan, T.V., Renu, K., Nancharaiah, Y.V., Satya Sai, P.M., Venugopalan, V.P. Nitrate removal from high strength nitrate-bearing wastes in granular sludge sequencing batch reactors. **Journal of Bioscience and Bioengineering** 2016, 121, 191-195.

- Suja, E., Nancharaiah, Y.V., Venugopalan, V.P. Denitrification accelerates granular sludge formation in sequencing batch reactors. **Bioresource Technology** 2015, 196, 28-34.
- Nancharaiah, Y.V., Venkata Mohan, S., Lens, P.N.L. Metals removal and recovery in microbial fuel cells: a review. **Bioresource Technology** 2015, 195, 102-114.
- Nancharaiah, Y.V., Lens, P.N.L. Selenium Biomineralization for Biotechnological applications. **Trends in Biotechnology** 2015, 33, 323-330.
- Nancharaiah, Y.V., Lens, P.N.L. The ecology and biotechnology of selenium respiring bacteria. **Microbiology Molecular Biology Reviews** 2015, 79, 61-80.
- Nancharaiah, Y.V., Francis, A.J. Hormetic effect of 1-ethyl-3-methylimidazolium acetate ionic liquid on bacteria. **Chemosphere** 2015, 128, 178-183.
- Nancharaiah, Y.V., G. Kiran Kumar Reddy, G., Krishna Mohan, T.V., Venugopalan, V.P. Biodegradation of tributyl phosphate, an organophosphate ester by aerobic granular biofilms. **Journal of Hazardous Materials** 2015, 283, 705-711.
- Kiran Kumar Reddy, G, Nancharaiah Y.V., Venugopalan, V.P. Aerobic granular sludge mediated biodegradation of an organophosphorous ester, dibutyl phosphite; **FEMS Microbiology Letters** 2014, 359, 110-115.
- Suja, E., Nancharaiah, Y.V., Venugopalan, V.P. Biogenic nanopalladium production by self-immobilized granular biomass: application for contaminant remediation. **Water Research** 2014, 65, 395-401.
- Kiran Kumar Reddy, G., Nancharaiah, Y.V., Venugopalan, V.P. Biodegradation of dibutyl phosphite by *Sphingobium* sp. AMGD5 isolated from aerobic granular biomass. **International Biodeterioration and Biodegradation** 2014, 91, 60-65.
- Nancharaiah, Y.V., Bera, S., Venugopalan, V.P. Green synthesis and *in vitro* evaluation of silver nanoparticle embedded antibiofilm coatings. **ChemXpress** 2014, 4(3).
- Dusane, D.H., Damare, S.R., Nancharaiah, Y.V., Ramaiah, N., Venugopalan, V.P., Kumar, A.R., Zinjarde, S.S. Disruption of microbial biofilms by an extracellular protein isolated from epibiotic tropical marine strain of *Bacillus licheniformis*. **PLOS One** 2013, 8(5), e64501.
- Suja, E., Nancharaiah, Y.V., Venugopalan, V.P. *p*-Nitrophenol biodegradation by aerobic microbial granules. **Applied Biochemistry and Biotechnology** 2012, 167, 1569-1577.
- Nancharaiah, Y.V., Renu, K., Sharma, N., Sekar, R., Venugopalan, V.P. Rapid establishment of *p*-nitrophenol biodegradation in acetate-fed aerobic granular sludge. **Applied Biochemistry and Biotechnology** 2012, 166, 1225-235.
- Nancharaiah, Y.V., Gupta, A., Dodge, C.J., Francis, A.J. Effect of exogenous electron shuttles on growth and fermentative metabolism in *Clostridium* sp. BC1. **Bioresource Technology** 2012, 108, 295-299.
- Nancharaiah, Y.V., Venugopalan, V.P., Francis, A.J. Removal and biotransformation of U(VI) and Cr(VI) by aerobically grown mixed microbial granules. **Desalination and**

- Water Treatment** 2012, 30, 90-95.
- Dusane, D.H., Dam, S., Nancharaiah, Y.V., Kumar, A.R., Venugopalan, V.P., Zinjarde, S.S. Disruption of *Yarrowia lipolytica* biofilms by rhamnolipid biosurfactant. **Aquatic Biosystems** 2012, 8, 17-32.
- Ebenezer, V., Nancharaiah, Y.V., Venugopalan, V.P. 2012. Chlorination-induced cellular damage and recovery in marine microalga, *Chlorella salina*. **Chemosphere** 2012, 89, 1042-1047.
- Nancharaiah, Y.V., Reddy, G.K., Lalithamanasa, P., Venugopalan, V.P. The ionic liquid 1-alkyl-3-methylimidazolium demonstrates comparable antimicrobial and antibiofilm behavior to a cationic surfactant. **Biofouling** 2012, 28, 1141-1149.
- Dusane, D.H., Pawar, V.S., Nancharaiah, Y.V., Venugopalan, V.P., Kumar, A.R., Zinjarde, S.S. Anti-biofilm potential of a glycolipid surfactant produced by a tropical marine strain of *Serratia marcescens*. **Biofouling** 2011, 27, 645-654.
- Dusane, H., Nancharaiah, Y.V., Zinjarde, S.S., Venugopalan, V.P. Rhamnolipid mediated disruption of marine *Bacillus pumilus* biofilms. **Colloids Surfaces B Biointerfaces** 2010, 81, 242-248.
- Nancharaiah, Y.V., Dodge, C.J., Venugopalan, V.P., Narasimhan, S.V., Francis, A.J. Immobilization of Cr(VI) and its reduction to Cr(III)-phosphate by granular biofilms comprising a mixture of microbes. **Applied and Environmental Microbiology** 2010, 76, 2433-38.
- Nancharaiah, Y.V., Venugopalan, V.P. 2011. Denitrification of synthetic concentrated nitrate wastes by aerobic granular sludge under anoxic conditions. **Chemosphere** 85, 683-688.
- Nancharaiah Y.V., Francis, A.J. Alkyl-methylimidazolium ionic liquids affect the growth and fermentative metabolism of *Clostridium* sp. **Bioresource Technology** 2011, 102, 6573-6578.
- Mohan, S. V., Falkentoft, C., Nancharaiah, Y.V., McSwain, B.S., Wattiau, P., Wilderer, P.A., Wuertz, S., Hausner, M. Bioaugmentation of microbial communities in laboratory and pilot scale sequencing batch biofilm reactors using the TOL plasmid. **Bioresource Technology** 2009, 100, 1746-1753.
- Nancharaiah, Y.V., Joshi, H.M., Hausner, M. Venugopalan, V.P. Bioaugmentation of aerobic microbial granules with TOL plasmid enhances biodegradation in a sequencing batch reactor. **Chemosphere** 2008, 71, 30-35.
- Nancharaiah, Y.V., Joshi, H.M., Venugopalan, V.P., Narasimhan, S.V. 2008. Formation of aerobic granules in the presence of a synthetic chelating agent. **Environmental Pollution** 2008, 153, 37-43.
- Dusane, D.H., Nancharaiah, Y.V., Venugopalan, V.P., Kumar, A.R., Zinjarde, S.S. Effect of nutritional and environmental conditions on biofilm formation by a tropical marine yeast isolate, *Yarrowia lipolytica* NCIM 3589. **Water Science and Technology** 2008,

58, 1221-1229.

Dusane, D.H., Rajput, J.K., Kumar, A. R., Nancharaiah, Y.V., Venugopalan, V. P., Zinjarde, S.S. Disruption of fungal and bacterial biofilms by lauroyl glucose. **Letters in Applied Microbiology** 2008, 47, 374-379.

Saravanan, P., Prabakaran, S. R., Nancharaiah, Y.V., Krishnaveni, M., Venugopalan, V. P., Jayachandran, S. Isolation and characterization of *Pseudoalteromonas ruthenica* (SBT033), an EPS-producing biofilm forming bacterium from the seawater intake point of a tropical power station. **World Journal of Microbiology and Biotechnology** 2008, 24, 509-515.

Nancharaiah, Y.V., Rajadurai, M., Venugopalan, V.P. Single cell level microalgal ecotoxicity assessment by confocal microscopy and digital image analysis. **Environmental Science and Technology** 2007, 41, 2617-2621.

Nancharaiah, Y.V., Schwarzenbeck, N., Mohan, T.V.K., Narasimhan, S.V., Wilderer, P.A., Venugopalan, V.P. Biodegradation of nitrilotriacetic acid (NTA) and ferric-NTA complex by aerobic microbial granules. **Water Research** 2006, 40, 1539-1546.

Nancharaiah, Y.V., Joshi, H.M., Mohan, T.V.K., Venugopalan, V.P., Narasimhan, S.V. Aerobic granular biomass: a novel biomaterial for efficient uranium removal. **Current Science** 2006, 91, 503-509, 2006.

Saravanan, P., Nancharaiah, Y.V., Venugopalan, V.P., Subba Rao, T., Jayachandran, S. Biofilm formation by *Pseudoalteromonas ruthenica* and its removal by chlorine. **Biofouling** 2006, 22, 1-11.

Nancharaiah, Y.V., Venugopalan, V. P., Wuertz, S., Wilderer, P. A., Hausner, M. Compatibility of the green fluorescent protein and a general nucleic acid stain for quantitative description of a *Pseudomonas putida* biofilm. **Journal of Microbiological Methods** 2005, 60, 179-187.

Nancharaiah, Y.V., Wattiau, P., Wuertz, S., Bathe, S., Mohan, S.V., Wilderer, P.A., Hausner, M. Dual labelling of *Pseudomonas putida* with fluorescent proteins for in situ monitoring of conjugal transfer of the TOL plasmid. **Applied and Environmental Microbiology** 2003, 69, 4846-4852.

Thiyagarajan, V., Nancharaiah, Y. V., Venugopalan, V. P., Nair, K. V. K., Subramonium, T. Relative tolerance of cirripede larval stages to acute thermal shock: a laboratory study. **Journal of Thermal Biology** 2000, 12, 451-457.

Thiyagarajan, V., Murthy, P. S., Nancharaiah, Y.V., Venugopalan, V. P., Nair, K. V. K., Subramonian, T. Influence of biofilms on the larval settlement of *Balanus reticulatus* Utinomi (Cirripedia: Crustacea). **Biofilm Journal** 2000, 4.

Rao, T. S., Nancharaiah, Y.V., Nair, K.V.K. 1998. Biocidal efficacy of monochloramine against biofilm bacteria. **Biofouling** 12, 321-332.

Books and Book chapters

Francis, A.J., Nancharaiah, Y.V., 2015. *In situ*- and *ex situ*-bioremediation of radionuclide-

contaminated soils at nuclear- and naturally occurring radioactive materials- sites page 185-236; Book chapter in, Environmental remediation and restoration at contaminated nuclear and NORM sites.

Nancharaiah, Y.V., Venugopalan, V.P., Aerobic granular sludge biofilms in wastewater treatment. Book chapter in biofilms in industrial water systems (Submitted).

Annie Modestra, J., Velvizhi, G., Vamshi Krishna, K., Arunasri, K., Lens, P.N.L., Nancharaiah, Y.V., Venkata Mohan, S., Bioelectrochemical systems for heavy metal removal and recovery. Book chapter in sustainable heavy metal remediation (Springer) (Submitted).

Editing a Book on "Microbial Biofilms in Bioremediation and Wastewater Treatment" from CRC press with book release deadline in June 2017.

Personal Details

Date of Birth: 01.04.1970

Birth Place: Kankatava, Andhra Pradesh, India

Family status: Married

Number of Children: 2 daughters

Residence: 12, 2nd Avenue, DAE Township, Kalpakkam

Phone: 044 27487706; Mobile: 9445783878;

Email: venkatany@gmail.com