



Kumaran Shanmugam, Ph.D.

Professor, Department of Biotechnology & Additional Responsibility: Director –Innovation, IPR and Community Engagement, Periyar Maniammai Institute of Science & Technology (Deemed to be University), Thanjavur – 613 403, India (www.pmu.edu):



Emails: kumarans@pmu.edu/directoripr@pmu.edu/kumaranshanmugam70@gmail.com



Weblink: <https://www.pmu.edu/department-of-biotechnology/faculty.aspx>

LinkedIn: <https://www.linkedin.com/in/kumaran-shanmugam-75932551/>

CAREER GOALS

Solving the problems in society through science and technology and strongly believe that the techniques learnt in various stages of journey are helpful. I have a strong academic and research network, for any research problem, I collaborate with my suitable colleagues and students who are working in various parts of the world.

EDUCATIONAL QUALIFICATIONS

05/04: **PhD, Analytical Chemistry**, Charles University, Prague, Czech Republic

09/01: **PhD, Environmental Science (Environmental microbiology)**

Anna University, Chennai, India

05/94: **MSc, Environmental Science**, Bharathidasan University, India

05/91: **BSc, Chemistry**, Bharathidasan University, India

Patent filed and published: Sequential Processing Hexagonal Reactor for Bio-degradable Hospital Waste,

Ref: No. No.201941023830 A

Journal Link: <http://www.ipindia.nic.in/journal-patents.htm>

Journal No.: **25/2019** (Part - 1 and refer page no.77)

Design (Patent) Filed and Published: Design Registration No.: 307134

Title: Reactor for Bio-degradable Hospital Waste

Journal Detail: Journal No. 01-2020 Part-6 Pg. No. 1728 Dt. 03-01-2020

Link for the Journal: http://ipindia.nic.in/writereaddata/Portal/IPOJournal/1_4828_1/Part-6_Designs.pdf

MEDALS/ BADGES RECEIVED

- 2019:** Innovation Ambassadors – Three Badges from IIC-MHRD and AICTE, Govt. of India
- 2009:** Endeavour Executive Fellowship with a Medal, Ministry of Education, Australia Government
- 2008:** Gold Medal Special Performance Award, Periyar Maniammai University, India.
- 2018 to till date: Recognition/Responsibility:** President of Institution's Innovation Council in PMIST supported by IIC-MHRD, AICTE, Govt. of India.

SCHOLAR CITATIONS

<https://orcid.org/0000-0001-6704-0371>

<https://www.mendeley.com/profiles/kumaran-shanmugam/>

PUBLICATIONS

- 47 Sangeetha, A., R. Rabitha, B. Sivasree, B. Nivedha, J. Sanjay Stanlin, C. Arun, Kumaran Shanmugam, and Pitchai Balakumar. "Adsorbent potential of the leaf powder of *Artocarpus heterophyllus* Lam.(jackfruit) in efficiently removing hexavalent chromium from landfill leachate. *Global Nest*, 2023.
- 46 Robust superhydrophobic composite coating using h-BN/MWCNT via supercritical fluid processing, S Rajiv, K Shanmugam, *Journal of Coatings Technology and Research*, 1-7, 2023.
- 45 Unleashing the potential of nanoparticles on seed treatment and enhancement for sustainable farming. Tamilmani Eevera, Shanmugam Kumaran, Maduraimuthu Djanaguiraman, Thanabalu Thirumaran, Quynh Hoang Le, Arivalagan Pugazhendhi, *Environmental Research*, 2023.
- 44 Imaging-based assessment of lung function in a population cooking indoors with biomass fuel: a pilot study, Abhilash S Kizhakke Puliyakote, Emma M Stapleton, Kumar Durairaj, Kesavan Karuppusamy, Geetha B Kathiresan, Kumaran Shanmugam, Sirajunnisa Abdul Rahim, Suresh Navaneethakrishnan, Monalisa Bilas, Rui Huang, Nervana Metwali, Matthew Jeronimo, Kung-Sik Chan, Junfeng Guo, Prashant Nagpal, Thomas M Peters, Peter S Thorne, Alejandro P Comellas, Eric A Hoffman, *Journal of Applied Physiology* 134 (3), 710-721, 2023.
- 43 Image registration based QCT characterization of the lungs of biomass cooks, A. S. Kizhakke Puliyakote, E. M. Stapleton, M. Bilas, N. Metwali, M. Jeronimo, I.M. Thornell, R. B. Manges, S. Suresh, K. Durairaj, K. Karuppusamy, K. Geetha, A. Sirajunnisa, K. Shanmugam, P. S. Thorne, T. M. Peters, A. P. Comellas, Eric A. Hoffman, *European Respiratory Journal* 2020 56: 1306; DOI: 10.1183/13993003.congress-2020.1306.

- 42 Lung function of primary cooks using LPG or biomass and the effect of particulate matter on airway epithelial barrier integrity, Abhilash Kizhakke Puliyakote; Nervana Metwali; Matthew Jeronimo; Ian M Thornell; Robert B Manges; Monalisa Bilas; Mohamed Ali Kamal Batcha; Mangaleswari Seeniappan Kumaravel; Kumar Durairaj; Kesavan Karuppusamy; Kathiresan Geetha; A Sirajunnisa; Kumaran Shanmugam; Peter S Thorne; Thomas M Peters; Eric A Hoffman; Alejandro P Comellas. *Environmental Research* Volume 189, 109888, 2020.
- 41 Amperometric determination of Myo-inositol using a glassy carbon electrode modified with nanostructured copper sulphide, Rajendran Rajaram, Muniyandi Kiruba, Chinnathambi Suresh, Jayaraman Mathiyarasu, Shanmugam Kumaran and Ramanathan Kumaresan, *Microchimica Acta* volume 187, Article number: 334, 2020.
- 40 Magnetically recyclable CoFe₂O₄/ZnO nanocatalysts for the efficient catalytic degradation of Acid Blue 113 under ambient conditions, S. Krishna, P. Sathishkumar, N. Pugazhenthiran, Kiros Guesh, R. V. Mangalaraja, S. Kumaran, M. A. Gracia-Pinilla and S. Anandan. *RSC Adv.*, 10, 16473-16480, 2020.
- 39 Heterogeneous sonocatalytic activation of peroxomonosulphate in the presence of CoFe₂O₄/TiO₂ nanocatalysts for the degradation of Acid Blue 113 in an aqueous environment, S.Krishna, P.Sathishkumar, N.Pugazhenthiran KirosGuesh, R.V. Mangalaraja, S. Kumaran, M.A.Gracia-Pinilla, S.Anandan, *Journal of Environmental Chemical Engineering*, Volume 8, Issue 5, 104024, 2020.
- 38 Synthesis and Characterization of Naringenin-Loaded Chitosan-Dextran Sulfate Nanocarrier. Muralidharan, S., Shanmugam, K. *Journal of Pharmaceutical Innovation*, 16, 269-78, 2021.
- 37 Long-term-durable anti-icing superhydrophobic composite coatings, S. Rajiv, S. Kumaran, M. Sathish, Volume 136, Issue 7, *J. App. Poly. Sci.* February 15, 2019.
- 36 Maskless patterned growth of ZnO nanorod arrays using tip based electrolithography, Kathalingam Adaikalam, Professor Hyun-Chang Park, Professor Dhanasekaran Vikraman, K Karuppusamy, Professor Hyun-Seok Kim, Kumaran Shanmugam, *Mater. Sci. Semicond. Process.* 77, 24-30, April 2018.
- 35 Fabrication of robust superhydrophobic coatings using PTFE-MWCNT nanocomposite: Subramanian Rajiv, Shanmugam Kumaran, Marappan Sathish. *Supercritical fluid processing. Surf. Interface Anal.* 2018;1-7. <https://doi.org/10.1002/sia.6392>.
- 34 Fabrication of arrayed metal oxide structures by electrochemical local oxidation using metallic tip with electric field and humidity, A. Kathalingam, Kumaran Shanmugam, Hyun-Chang Park, Hyun-Seok Kim, *J. Mater. Process. Tech.* 252, 304-312, 2018.
- 33 Investigation of Phytochemical Profile and other Safety Parameters for A Hepatoprotective Proprietary Polyherbal Formulation (Liverem) by Using Advanced Instrumentation, Jayachandra Kuncha, P.Thirugnanasambantham, Kumaran Shanmugam, N.Narayanan, *Int. J. Pharm. Sci. Rev. Res.*, 47(1), 2017; 100-105 (online).
- 32 Patterning of *Vibrio spp.* on oxide dots of silicon for the development of biosensor, P. Sankar Ganesh, K. Sathyaraj, N. Chandrakala, K. Rajendran, S. Kumaran, *Ind. J. Geo- Mar. Sci.* 2015 (online).
- 31 Green synthesis of ceftriaxone conjugated *Mukia maderaspatana* mediated silver nanoparticles and its biological applications, M. Harshiny, M. Matheswaran, G. Arthanareeswaran, S. Kumaran, S.Rajasree, *Eco-toxicol. Environ. Safety*. Online ahead of print. doi: 10.1016/j.ecoenv.2015.04.041.

- 30 Genomic wide DNA methylation analysis in blood of local population: A survey in Southern India, N.B. Basheer, H. Muthukumar, M.N. Lincy, S. Kumaran, J. Chem. Pharma. Res. 7 (7), 967— 971 2015.
- 29 Microbicidal tissue paper using green synthesized silver nanoparticles, S.C.G.K. Daniel, J. Abirami, S. Kumaran, K. Nehru, M. Sivakumar, Curr. Nanosci. 11 (1), 64-68, 2015.
- 28 Optimization of additives for recycling evaluated answer scripts – Microscopic view with Raman fingerprints, J. Kalimuthu, S. Rajiv, A. P. Aruna, S. Kumaran, J. Chem. Pharma. Res. 6, 12, 178 — 185 2014.
- 27 *Ipomea carnea* based silver nanoparticle synthesis for antibacterial activity against selected human pathogens. S.C.G.Kiruba Daniel, N. B. Basheer, M. Harshiny, K. Nehru, M. Sivakumar and S. Kumaran, J. Exp. Nanosci. 9, 197 — 209, 2014.
- 26 Conventional and recent nanotechniques for DNA Methylation Profiling. N. B. Basheer, S. Rajasree, A. Laxmi, M. Harshiny, R. Kaliaperumal, S. Kumaran, J. Mol. Diag. 15, 17 — 26, 2013.
- 25 Topographic imaging of *Mycobacterium smegmatis* cells surface treated with Ethambutol and Rifampicin, P. Sankar Ganesh, K. Kanivalan, K. Rajendran, S. Kumaran, Int. J. Pharm. Bio. Sci. 4, 255 — 262, 2013.
- 24 FD-CALC: Atomic force microscopy intermolecular force calculator, M. Vijayasathy, K.Rajendran, S. Kumaran, Quant. Matt. 2, 238 — 240, 2013.
- 23 Quantitative estimation of Lupeol and Stigmasterol in *Costus igneus* by high performance thin layer chromatography. K. Manjula, K. Pazhanichamy, S. Kumaran, T. Eevera, K. Rajendran, J. Liq. Chrom. & Rela.Technol. 36, 192-212, 2013.
- 22 Intermolecular force measurement between monoamine oxidase B and *Pseudarthria viscida* (L.) using atomic force spectroscopy, S. B. Manoharan, V. Marimuthu, P. Kalailingam, N. B. Basheer, A. Perumal, R. Kaliaperumal, S. Kumaran, J. Exp. Nanosci, 8, 596, 2013.
- 21 *In vitro* Evaluation of calcium Oxalate Monohydrate crystals influenced by *Costus igneus* aqueous extract, K. Manjula, K. Rajendran, T. Eevera, S. Kumaran, Scandinavian J. Urol. Neph. 46, 290 —297, 2012.
- 20 Effect of *Costus igneus* stem extract on calcium oxalate urolithiasis in albino rats, K. Manjula K. Rajendran, T. Eevera, S. Kumaran, Urol. Res. (Urolithiasis) 40, 499 — 510, 2012.
- 19 Growth Characterization of calcium oxalate monohydrate crystals influenced by *Costus igneus* aqueous stem extract, K. Manjula, K. Pazhanichamy, S. Kumaran, T. Eevera, C. Dale Keefe, K. Rajendran. Int. J. Phar. & Pharmceu. 4, 261 — 270, 2012.
- 18 Device for fabrication of oxide dots on silicon using anodic oxidation technique with Copper wire, K. Sathiyaraj, K. Kanivalan, P. Venkatesan, K. Rajendran, S. Kumaran, Microsys. Technol. 17, 1459 — 1462, 2011.
- 17 Fabrication of porous silicon nanoparticles to attach clorogyline for drug delivery, M. Pradeepa, P. Venkatesan, E. Menaka, K. Rajendran, and S. Kumaran, in Proceedings of the International Conference of Bioscience, Biochemistry and Bioinformatics (IPCBEE '11), IACSIT Press, Singapore, 2011.

- 16 Efficacy of Methanolic Extract of *Costus igneus* Rhizome on Hypoglycemic, Hypolipidemic Activity in Streptozotocin (STZ) Diabetic Rats and HPTLC Analysis of Its Active Constituents, P. Kalailingam, E. Tamilmani, R. Kaliaperumal, S. Kumaran, in Proceedings of the International Conference of Bioscience, Biochemistry and Bioinformatics, (IPCBE '11), IACSIT Press, Singapore, 2011.
- 15 A review on techniques to fabricate silicon oxide arrays to develop biochip. K. Sathiyaraj, M. Harshiny, N. B. Basheer, K. Rajendran, S. Kumaran, Superlat. Microstru. 49, 581 — 590, 2011.
- 14 Positive Patterning of Ferritin, and Fibronectin Molecules on Silicon by Atomic Force Microscopy Anodic Oxidation, S. Kumaran, T. Yoshinobu, W. Moon, H. Iwasaki, J. Nanosci. Nanotech. 11, 3808 — 3813, 2011.
- 13 The Efficacy of *Costus igneus* rhizome on Carbohydrate metabolic, hepatoprotective and antioxidative enzyme in streptozotocin (STZ) induced diabetic rats. P. Kalailingam, A. D. Sekara, J. S. Clement Samuela, P. Gandhirajana, Y. Govindaraju, S. Kumaran, E. Tamilmani, J. Health. Sci. 57, 37 — 46, 2011.
- 12 Micropatterning of Si Surface with Protein Molecules by the AFM Anodic Oxidation Method, J. Suzuki, T. Yoshinobu, W. Moon, S. Kumaran, H. Iwasaki, Electrochemistry (Japan) 74, 131 — 134, 2006.
- 11 Voltammetric determination of Phenylglyoxylic Acid in Urine using Graphite Composite Electrode, T. Navratil, Z. Senholdova, S. Kumaran, J. Barek, Electroanal. 18, 201 — 206, 2006.
- 10 Polarographic and voltammetric determination of trace amounts of 1, 3-dinitronaphthalene. S. Kumaran, J. Barek, J. Zima, Chem. Anal. (Warsaw), 49, 765 — 776, 2004.
- 9 Polarographic and voltammetric determination of submicromolar concentrations of genotoxic 1,5-dinitronaphthalene, S. Kumaran, J. Barek, J. Zima, Czechoslovak Chem. Comm. 69, 2021 — 2035, 2004.
- 8 2,4-Toluene Diamines – Their Carcinogenicity, Biodegradation, and Analytical Techniques and an Approach towards Development of Biosensors -A General Review. S. Kumaran, S. Subrahmanyam, T. V. Subramanian, N. Kodandapani, and S. F. D'Souza, Anal. Sci. 17, 1369 — 1374, 2001.
- 7 Amperometric Biochemical Characterization of Isolated Fungal Strains, S. Subrahmanyam, S. V. Tarakad, N. Kodandapani, J. N. Amersham, B. Ranganathan, S. Kumaran, and D. Jayakumar, Electroanal. 13, 1454 — 1458, 2001.
- 6 Development of a sensor for acetic acid based on *Fusarium solani*, S. Subrahmanyam, N. Kodandapani, S. Kumaran, K. Moovarkumuthalvan, D. Jeyakumar, and T.V. Subramanian, Electroanal. 13, 1275 — 1278, 2001.
- 5 Cyclic Voltammetric measurements of growth of *Aspergillus terreus*, S. Subrahmanyam, N. Kodandapani, S. Kumaran, K. Moovarkumuthalvan, D. Jeyakumar, and T.V. Subramanian, Anal. Sci. 17, 481 — 484, 2001.
- 4 Development of electrochemical microbial biosensor for ethanol based on *Aspergillus niger*. S. Subrahmanyam, S. Kumaran, V. Murali Madhav, M. Murugesan, T.V. Subramanian, D. Jeyakumar, Electroanal. 13, 944 — 948, 2001.

- 3 Voltammetric Studies of *Aspergillus niger* – Assessment of their growth using electro active extra cellular production of metabolite, S. Subrahmanyam, S. Kumaran, T.V. Subramanian, V. Murali Madhav, M. Murugesan, D. Jeyakumar, *Electroanal.* 13, 1051 — 1053, 2001.
- 2 Assessment of growth of *Fusarium solani* by Cyclic Voltammetry and their bioanalytical Applications, S. Subrahmanyam, S. Kumaran, V.M. Madhav, M. Murugesan, T.V. Subramanian, D. Jeyakumar, *Analyst*, 125, 2166 — 2168, 2000.
- 1 Rapid biochemical characterization of polyurethane degrading fungi using amperometric Biosensor technique, S. Subrahmanyam, S. Kumaran, T.V. Subramanian, M. Murugesan, V. M. Madhav and D.Jeyakumar, *Bull. Electrochem.* 15, 452 — 457, 1999.

RESEARCH ADVISOR FOR Ph.D., THESES

- 2020:** “Comprehensive approach to study the anti-colon cancer activity of the isolated bioactive components from *Ocimum basilicum L.* Dr. B. Purushothaman, thesis, Periyar Maniammai Institute of Science & Technology (Deemed to be University), India (Awarded)
- 2019:** “Investigation of Carbon-Polymer Nanocomposite Superhydrophobic Coatings” Dr. S. Rajiv, thesis, Periyar Maniammai Institute of Science & Technology (Deemed to be University), India (Awarded)
- 2016:** “Elucidation of Methylation pattern of DNA in human samples for early detection of cancer”, thesis, Dr. B. Nazeema Banu, Periyar Maniammai Univ. (Deemed to be University) India (Awarded).

JOURNAL COVER PAGE

- 2013:** Our scientific research diagram has appeared in the front cover of *Journal of Molecular Diagnostics*, Volume 15, Issue 1, January–February 2013, Pages 17–26. This journal is co-published by the Association for Molecular Pathology (AMP) and the American Society for Investigative Pathology (ASIP).



<http://www.sciencedirect.com/science/article/pii/S1525157812002711>

CONSULTANCY SERVICE

2010— 2011: Generated US Dollar 3500/- through my group expert services for AFM analysis of various research samples (biosensors, cancer biology, early detection of diseases and expertise in advanced measurement tools.) across Tamil Nadu, India.

Chapter in Books in press – Springer group of publication

- 1 Nanomaterials: Synthesis and Its Applications for Sustainable Development" in Biogenic Nano-Particles and their Use in Agro-ecosystems, Nitin Kumar, Abarna Balamurugan, Purushothaman Balakrishnan, Kanchan Vishwakarma, Kumaran Shanmugam, pp 99-132, online ISBN 978-981-15-2985-6, Springer, 2020. <https://link.springer.com/chapter/10.100>
- 2 Balakumar, P., Alqahtani, A., Shanmugam, K., Srividhya, P.K., Sundram, K. (2023). How to Efficiently Write a Persuasive Discussion Section. In: Jagadeesh, G., Balakumar, P., Senatore, F. (eds) The Quintessence of Basic and Clinical Research and Scientific Publishing. Springer, Singapore. https://doi.org/10.1007/978-981-99-1284-1_46

WORK HISTORY

03/07 till date: **Professor (2007 joined as Lecturer), Biotechnology, Periyar Maniammai Institute of Science & Technology (Deemed to University), India:** I teach Biotechnology and Nanotechnology to Bachelor and Master Degree students of Engineering and Technology in addition to M.Phil and Research Scholars. Provide mentorship for advanced PhD researchers. Teaching includes subjects such as Environmental Science & Engineering, Nanobiotechnology, Environmental Biotechnology, Biochemistry, Downstream Processing, Organic Chemistry, Protein Chemistry, Nano-manipulation & Assembly, Instrumental Methods of Analysis and Human Ethics.

8/2023 till date: **Director, Innovation, IPR and Community Engagement,** Peiyar Manimmai Institute of Science & Technology.

- 01/18 – 2 Aug 2023:** **Dean Research (in-charge):** I am monitoring research progress of the deemed to be University, Ph.D. research scholars progress, motivating faculty to submit research proposals to various agencies and inviting experts from various fields.
- 11/16 till 18th July17:** **Chief Executive Officer-in-charge, Technology Business Incubator (Section-25 company)** – Incubating companies, help them to be successful entrepreneurs, awareness programme on entrepreneurship among the youths, testing facilities for biotechnology companies and for materials.
- 09/16 till date:** **Board of Management Member** (Senate) for Periyar Maniammai University.
- 07/09 — 10/09:** **Endeavour Executive Fellow (Australian Government), Flinders University, Australia:** I worked on fabrication of optical biosensors using porous silicon and oxide dots were fabricated on porous silicon.
- 09/04 — 09/06:** **Postdoctoral Researcher, ISIR (SANKEN), Osaka University, Japan:** I worked on fabrication of biochip using atomic force microscopic technique by anodic oxidation. I have specialized in oxide dot fabrication on silicon, self-assembled monolayers and patterned ferritin and fibronectin molecules.
- 06/04 — 06/04:** **Researcher, J. Heyrovsky Institute of Physical Chemistry, Czech Academy of Science, Prague: Czech Republic:** I carried out research on determination of phenylglyoxylic acid in human urine using cathodic differential pulse stripping voltammetry.
- 06/94 — 06/95:** **Chemist, Enkem Engineers Private Limited, India:** I worked on optimization of coagulation for waste water treatment plants in a confectionary industry-(company doesn't have proof of my work history).

SCHOLARSHIPS AND AWARDS

- 04/05:** Postdoctoral scholarship, *Estancias de jovenes doctors* from Ministry of Education, Spain – (Preferred to accept another research assignment which was offered to me at the same time).
- 09/04 — 09/06:** Postdoctoral Research Award, Osaka University, Japan supported by 21st Century of Excellence and Kobe Cluster Creation, Japan.
- 02/00 — 05/04:** Research Scholarship, Czech Ministry of Youth and Sports Scholarship, Prague, Czech Republic.
- 09/96 — 09/99:** Senior Research Fellowship, Council of Scientific and Industrial Research (CSIR), Government of India, New Delhi.
- 12/93 — 05/94:** MSc research project award, Bishop Heber College, Tiruchirapalli, India.

RESEARCHGRANTS/WORKSHOP/SEMINAR GRANTS/AWARD GRANTS/FELLOWSHIP GRANTS/AS RESEARCHER/CO-INVESTIGATOR/ PRINCIPAL INVESTIGATOR

Title: Wound healing ointment from fish collagen incorporated with *aloe vera*
Role: Student's research project supervisor
Grant: 10,000/- (Five thousand in rupees)
Funding agency: Tamil Nadu Council for Science and Technology
Period: (01/12/2016 — 30/04/2017)
Project website: <http://www.tanscst.nic.in/pdf/spsr17P1.pdf>

Title: Correlation of Pulmonary Structural and Functional Alterations in a population exposed to Indoor Cooking with Solid Biofuel: A Pilot Study
Role: Basic Scientist-Member & Secretary for carrying human research subject-Institutional Ethical Committee Meeting in India
Grant: University of Iowa will give grant toPMU to cover the cost of CT scan of 30 subjects and analysis of blood and air.
Funding agency: University of Iowa
Period: (21/08/2015 — 21/08/2016)
Project website: <http://www.i-clic.org/projects.html>

Title: M.Tech Nanotechnology course in Periyar Maniammai University, India
Role: Co-investigator
Grant: 10 million INR (~ 150,000 US \$)
Funding agency: Department of Science and Technology, Government of India, New Delhi.
Period: (22/10/2010 —31/03/2016)
Project Number: DS T project #SR/NM/P G-05/2008

Title: Endeavour Executive Award
Role: Endeavour Executive Researcher
Grant: Australian Dollar 20,000 (US \$ 14,000)
Funding agency: Department of Education, Employment and Workplace Relations, Australian Government
Period: (7/July/2009 — 30/Oct/2009)
Project Number: 1365_2009
Project website: <https://internationaleducation.gov.au/Endeavour%20program/Scholarships-and-Fellowships/alumni/Documents/07-14%20Recipients.pdf>

Title: **Patterning of biomolecules on silicon using AFM anodic oxidation technique**

Role: Postdoctoral Fellow

Funding agency: Kobe Cluster Creation Project and the 21st Century Centre of Excellence (COE)

Grant: 13,287,000 ¥ (US \$ 10,000)

Period: 2004-2006

Website - Reference:

<http://www.sanken.osaka-u.ac.jp/jp/operation/pdf/nenji16.pdf> (2004-report)

<http://www.sanken.osaka-u.ac.jp/jp/operation/pdf/nenji17.pdf> (2005-report)

<http://www.sanken.osaka-u.ac.jp/jp/operation/pdf/nenji18.pdf> (2006-report)

Title: **Polarographic and voltammetric determination of genotoxic and ecotoxic nitro and azo compounds**

Role: Research Scholar

Funding agency: Czech Republic, Europe

Grant: 240,000 CZK (US \$ 9,000)

Period: 2001-2003

Project Number: 253/2001/B-CH/PrF

Website - Reference: http://www1.cuni.cz/cuni/ruk/gauk/zz2003/253_01-e.htm

Title: **100 nm patterning of biomolecules on silicon for the next generation chip**

Role: Principal Investigator

Grant: 7 Million INR (~ 100, 000 US \$)

Funding agency: Department of Biotechnology, Government of India, New Delhi.

Period: (1/4/2008 — 31/3/2011)

Project Number: BT/PR10018/NNT/28/95/2007

Title: **Elucidation of Methylation pattern of DNA in human samples for early detection of cancer using nanomolecular techniques**

Role: Supervisor

Funding agency: CSIR, Government of India, New Delhi, India

Grant: 0.35 Million INR (US \$ 3,000)

Period: 1.04.2009 -31.03.2013 (Three years – there was break available in the funding)

Project Number: 09/960(002)/2K9-EMR-I

Title: Micro Patterning Of Methylcytosine Antibody And DNA For Nanomechanical Recognition Of Methylation Pattern
Role: Supervisor
Funding agency: CSIR, Government of India, New Delhi, India
Grant: 0.5 Million INR (US \$ 6,000)
Period: 27.10.2014 to 29.10.2015
Project Number: 09/960 (002)/2014.EMR-I

Title: National Staff Development Program (Workshop)-2010
Role: Principal Coordinator
Funding Agency: All India Council for Technical Education (AICTE), New Delhi, India
Grant: 0.7 Million INR (US \$ 70,000)
Period: (3/5/10 — 14/5/10)
Project Number: 1-78/RID/SDP (92) 2008-09

Title: Genomera-08 - National Conference on Nanobiotechnology
Role: Conference Secretary
Funding agency: Department of Science and Technology, Government of India
Grant: 50 ,000 INR (1000 US \$)
Period: (24/7/08 — 25/7/08)
Project Number: 100/1FD/566/2008-2009

EXPERT CONTRIBUTOR/ REVIEWER IN JOURNALS

2016 — till date: International Journal of Environment and Pollution
2016 — till date: Research and Reports in Medicinal Chemistry
2016 — till date: Breast Cancer: Targets and Therapy
2016 — till date: Research and Reports in Biodiversity Studies
2016 — till date: Research and Reports in Biochemistry
2016 — till date: Reports in Electrochemistry
2016 — till date: Clinical Interventions in Aging
2016 — till date: Drug Design, Development and Therapy
2016— till date: Journal of Blood Medicine
2016— till date: Journal of Medical Internet Research
2015 — till date: Cancer Management and Research
2015 — till date: International Journal of Nanomedicine

STATE GOVERNMENT ETHICAL COMMITTEE FOR CARRYING OUT RESEARCH WITH CANCER TISSUES

06/12: State Government Medical Ethical Committee clearance to collect the tumor tissues and blood samples from patients for Cancer Research – My Ph.D student, Ms. B. N. Banu has obtained.

CONTRIBUTION IN A CHAPTER OF A BOOK

2015: Vegetables and Human Health: Editor: Professor R. K. Rana, Haryana Agricultural University, India. Chapter 33: Herbal Remedy for Urinary Stones: K. Manjula, K. Pazhanichami, K. Rajendran, S. Kumaran and T. Eevera, Publisher: Scientific Publishers, India. ISBN: 978-81-7233-901-2 (page 454- 468).

INTERNATIONAL CO-ORDINAOR

2013: Logistic Support to visit by Dr. Parris N. Glendening, Former Governor of Maryland (1995-2003) & President, Smart Growth America's Leadership Institute, USA

2013: Dr. Michael Ohadi, Professor, Professor & Co-Founder, Center for Environmental Energy Engineering (CEEE), University of Washington, USA – Support rendered for his immigration paperwork to sort out his visa clearance. Indian Embassy, Washington D. C. & Department of home affairs, New Delhi, Government of India.

2011: Logistic and local support: Dr. Josef Novotny, Faculty, Charles Univ. and his students Ms. Jana Kubelkova, Ms. Dana Kralova and Ms. Magalena Vankova, Czech Republic.

2011-2013 Logistic support: Dr. Allen J Britten, Professor, Department of Chemistry, Cape Breton University – Logistics – for several visits.

2012 Logistic support: Dr. Saito Chihiro and students Faculty of International Welfare Development, Nihon Fukushi University, Japan.

2013 Logistic support: Mr. Liao Wei-Hsiang and Mr. Hong, Yong-Jia (M.Tech students) from Lunghwa University of Science and Technology, Taiwan. International office helped them to get Indian Visa by organizing supporting letter.

WIPO certificates

PCT101E19 Introduction to Patent Cooperation Treaty

Promoting Access to medical technologies and innovation – A WHO, WIPO, Executive Course on the intersections between public health intellectual property and trade

Training Material: IP Panorama TM