

**RAJIV DUTTA**, M.Tech (IIT-Kharagpur), Ph.D (BITS-Pilani)  
Dean- Academics and Professor in BioEngineering &  
Dean-School of Biological Engineering and Life Sciences  
Shobhit Institute of Engineering & Technology (Deemed-to-be-University)  
NH-58, Modipuram, Meerut, UP-250110, India  
Permanent Address: A-517, Indira Nagar, Behind Lekhraj Market  
Lucknow, UP-226016



### Contact Information

Mobile: 9839236821 (Primary); 7011215405 (Alternate) Email: [profrajivdutta.2019@gmail.com](mailto:profrajivdutta.2019@gmail.com)  
URL: <http://rdutta.50megs.com>

ORCID ID: 0000-0003-3411-6530; Researcher ID: S-3341-2017

LiveDNA: 91.11786; VIDWAN (UGC) ID: 141534 (<https://vidwan.inflibnet.ac.in/profile/141534>)

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**An Academic Administration Position with teaching and high quality  
Research activity in Interdisciplinary Life Sciences**

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## MY UNIQUE SELLING PROPOSITION (USP)

- Published & FER submitted for Patent # 31481 (The Patent Office Journal October 2010 page # 126) "Electrical Biosensor for Early Detection of Graft Compatibility in Plants".
- Excellent knowledge about UGC Act, University Act, Statutes and Ordinances, prepared these documents for Private or Deemed Universities. Involved in UGC, AICTE, NBA, NAAC and NIRF documentations and inspections at various Universities.

## QUALIFICATIONS

### (a) Educational (Highest two degrees):

#### **Birla Institute of Technology and Science, Pilani, Rajasthan, India**

Ph.D. in Biotechnology, September 1998

**Title of the thesis:** The biophysical mechanism(s) of electrical stimulation on *in vitro* growth and differentiation in *Populus deltoids* and *Nicotiana tabacum*.

#### **Indian Institute of Technology, Kharagpur, W.B., India**

M.Tech. in Biotechnology and Engineering, January 1989

**Title of Dissertation:** Bioproduction of diosgenin through *in vitro* culture of *Kallstroemia pubescens* (G. Don) Dandy

### **Additional Qualification:**

#### **Symbiosis University Center for Distance Learning, Pune, India**

Post Graduate Diploma in Educational Administration (PGDEA), August, 2017

### (b) Elected Fellow or Member of the Learned Academies/ Societies

- (a) **Royal Society of Biology, London (Fellow)**
- (b) International Society for Research and Development (Fellow)
- (c) The American Society of Research (Fellow)
- (d) International Academy of Science, USA (Elected Senior Member)
- (e) National Academy of Sciences, India (NASI) (Elected Member)
- (f) Sigma-Xi, USA (Elected Member)
- (g) International Academy of Science, USA (Elected Senior Member)
- (h) American Association of Science and Technology (Fellow)

### (c) Professional Training:

	Place	Title of Training	Duration
1	KG Medical College, Lucknow	Animal Cell Culture techniques for chromosomal preparation	Dec. 1986 to July 1987
2	National Chemical Laboratory, Pune	Plant Tissue Culture for micropropagation, somaclonal variation and protoplast technology for plant improvement	Feb. 1 to 14, 1988
3	National Botanical Research Institute, Lucknow	Plant Tissue Culture Techniques	May 1988 to Dec. 1988
4	Center for Cell and Tissue Culture, Kyoto University, Kyoto	Image analysis in Plant Tissue culture	June 3 to 23, 1998
5	Birla Institute of Technology & Science, Pilani	Indo-US workshop on Recombinant DNA and its application in drug discovery and Biotechnology	Feb. 22-27, 1999
6	Birla Institute of Technology & Science, Pilani	BRNS National workshop on Radiochemistry and application of radioisotopes	Oct. 15-22, 2000
7	The Nobel Foundation, Ardmore, OK and Oklahoma State University, Stillwater, OK	Bioinformatics Fundamentals	June 1-10, 2001

## WORK EXPERIENCE

### (a) Teaching Experience:

Oct. 1993 to Dec.2000	Lecturer/ Lecturer-Senior Scale at the Biological Science Group, Birla Institute of Technology & Science, Pilani, India (Core Group faculty at Center for Biotechnology- A multidisciplinary center)
July 2005-August 2009	Professor & Deputy Director (Off. Director), AMITY Institute of Biotechnology, Amity University Uttar Pradesh, Lucknow
August 2009- July 2011	Professor & Director, School of Biotechnology and SU-QNS Center for Excellence in Nanotechnology and Bio-inforamtics, Shobhit University, Meerut, India
August 2011- August 2012	Director, School of Biotechnology, IFTM University, Moradabad.
August 2012-August 2013	Dean and Sr. Professor, Faculty of Biological Engineering, Graphic Era University, Dehradun
August 2013-July 2016	Director and Sr. Professor, Institute of Bioscience & Technology (IBST), Shri Ramswaroop Memorial University, Barabanki.
July 2016-August 2017	Coordinator, Department of Biotechnology, SET, Sharda University, Greater Noida Coordinator-NIRF for School of Engineering & Technology
September 2017- June 2018	Professor, Department of Biotechnology, CET, IILM-AHL, Greater Noida (Involved with proposal of University with UP and Haryana Group)
July 2018 –Sept 2020	Professor in Bio-Engineering & Dean (Applied Sciences), Dr. KN Modi University, Newai-Banasthali
Sept. 2020- till date	Dean-Academics and Dean School of Biological Engineering & Life Sciences, Shobhit Institute of Engineering & Technology (Deemed-to-be-University), Meerut
<b>Courses Taught during above assignments:</b>	Biochemical Engineering, Bioprocess Engineering, Cell & Tissue Culture Technology, Nano-Biotechnology, Fermentation Technology, Plant Biotechnology, Biomedical Instrumentation, Cell Biology, Biophysics, and General Biology. Research Methodology
<b>Laboratory Courses Involved:</b>	Cell and Tissue Culture Tech. (includes the Laboratory Component) Measurement Techniques-I (Core level Laboratory) Genetic Engineering (Higher level Laboratory)

### (b) Resource person for various programs:

	Program	Venue	Duration
1.	AICTE-ISTE Short term training programme on Molecular Biology techniques in Biotechnology	Birla Institute of Technology & Science, Pilani	Dec. 18-30, 2000
2.	AICTE Staff Development Program on Nanotechnology	Vivekanandha College of Engineering for Women, Trichengode, TN	June 1-14, 2011
3.	AICTE-LSFI Workshop on Nanotechnology	MIET, Meerut	Nov 22-26, 2011

### (c) Research Experience:

1985-1987	Research Assistant	ICMR Center for Advanced Studies on Genetic Diseases, King George's Medical College, Lucknow
1989-1991	Scientist Fellow	National Botanical Research Institute, Lucknow
1991-1993	Scientist (DST-Young Scientist's Project)	CSIR Complex (now Institute of Himalayan Bioresource Technology), Palampur.
1997	Visiting Scientist Short term	Microgravity & Cell Polarity Project, San Francisco, USA
2001-2002	Research Faculty	Department of Botany, OSU, Stillwater, OK, USA
2002-2004	Research Faculty	Dept. of Biological Sci., Purdue University, West Lafayette, IN, USA
2004-2006	Research Specialist (Ion channel)	Nanon Technologies Laboratory, Purdue Discovery Park, West Lafayette, IN USA

### (d) Honorary Positions:

1	Biosensor Academy of India, Lucknow	Honorary Professor	2006-till date
2	Indo Asian Academy Bangalore	Quantum NanoScientific Chair Visiting Professor in Nanobiotechnology	2010-2016
3	Seira LifeScience Inc. Melbourne, Australia	Honorary Scientific Advisor	2011-till date
4	Life Science Foundation of India	Hon. Advisory Board Member	2012- till date

### (e) Principal Investigator of various sponsored Projects:

	<b>Title of the Research Projects</b>	<b>Sponsoring Agency</b>
1	Studies on the effect of magnetism on plants	Indian Association of College Going Scientists, Calcutta
2	Studies on the effect of weak electric current on growth and differentiation in tissue culture	Department of Science & Technology, Govt. of India, New Delhi
3	Electrical influence on physiological changes with organogenesis in tissue culture	University Grants Commission, Govt. of India, New Delhi
4	Studies on the electrical resistances of graft union in Rose	University Grants Commission, Govt. of India, New Delhi
5	Studies on the electrical coupling in root hairs	University Grants Commission, Govt. of India, New Delhi
6	Large scale cultivation of plant cells for production of medicinally important compounds	Department of Science & Technology, Govt. of Rajasthan, Jaipur
7	Studies on the Biochemical response of electrical signaling in the reproductive system of <i>Hibiscus rosa sinensis</i>	University Grants Commission, Govt. of India, New Delhi

### (f) Associated as Team Member with various sponsored research projects:

	<b>Project Title</b>	<b>Sponsoring Agency &amp; PI</b>
1	Genetic counseling and prenatal diagnosis of various genetic diseases	Indian Council of Medical Research, Gol <b>Prof. SS Agrawal &amp; Dr. S Das, KGMU</b>
2	Tissue culture of <i>Shorea robusta</i> and <i>Populus deltoids</i> : Development of technological know how	Department of Biotechnology, Gol <b>Dr. HC Chaturvedi, NBRI</b>
3	Studies on the Bioremediation of heavy metals using cyanobacteria with special reference to nuclear wastes	BRNS, Department of Atomic Energy, Gol <b>Prof. SK Verma, BITS</b>
4	Pollen tube growth and polarity: Knowhow development	NSF, USA <b>Prof. KN Robinson, PU, USA</b>

### (g) First-Degree Thesis Supervised:

	Name of the students and Thesis Degree	Title of the Thesis
1	Mr. MSKR Chakravorthy B.E. (Computer Sc.)	Computer Optimization of Plant Tissue culture production.
2	Mr. KG Srikumar B.E. (Chemical Engg.)	Analysis and design of Bioreactors – with special emphasis to optimization.
3	Mr. Bhavin C. Shah B.E. (Chemical Engg.)	Tissue culture of <i>Vinca rosea</i> – with special reference to the technological problems in large culture volume.
4	Mr. M. Sunil Kumar M.Sc. (Biological Sc.)	Mathematical modeling of neurons and neurocomputers.
5	Miss N. Prathibha B.E. (Chem. Engg.)	The magnetically stabilized Fluidized bed: A novel bioreactor for Plant Tissue Culture
6	Miss Jaya T. Chari B.E. (Chem. Engg.)	Mathematical Modeling and simulation studies on Tumbling reactor with special reference to phototrophic organism
7	Mr. Suresh Emmanuel B.E. (EEE)	Digital signal processing of heart sounds: A diagnostic tool
8	Ms Pragati Sahai M. Phil (Biotechnology)	The effect of external EMF on cell volume in <i>Nicotiana tabaccum</i> and on pollen tube growth in <i>Lillium longiflorum</i> in presence of GABA

### (h) Doctoral Thesis Advised:

S.N.	Name of the students and Thesis Degree	Title of the Thesis	University
<b>Completed:</b>			
1	Ms. Jingwei Yin	Role of endocytosis at pollen tube tip during calcium influx (with Prof. KR Robinson)	Purdue Uni, West Lafayette, IN, USA
2	Mr. Ashok Kumar Mishra	Studies on the development of an electrical Biosensor for the Measurement of the Graft Union Success Rate in Biophysical Systems	DDU Gorakhpur Uni
3	Ms. Suchi Smita	Identification of suitable target for GsMTx-4: A venom peptide from <i>Tarantula</i> for treatment of High Blood Pressure	Integral University, Lucknow
4	Ms. Shilpi Srivastava	Studies on the Biosynthesis of silver nanoparticle using fungi immobilized system for its anti-bacterial activity	Integral University, Lucknow
5	Mr. Nabeel Ahmad	Studies on Synthesis, Characterization and Application of Metallic Nanoparticles	IFTM University, Moradabad
6	Mr. Anil Pandey	Validation and Optimization of Leads against Fab enzyme regulating in <i>Plasmodium Falciparum</i> : An <i>In silico</i> study	Shri Ramswaroop M. University, Barabanki
7	Ms. Pragati Sahai	Development of green root cell lines for Eco-friendly production of Nano-conjugates	Sharda University, Greater Noida
<b>Ongoing:</b>			
1	Mr. Ayush Madan	Studies on the Cytotoxic effects of gold and silver nanoparticles on human cells with special reference to chromosomal aberrations	Shobhit Deemed University (SIET)
2	Ms. Sweety Thakur	Biosynthesis and characterization of metal nanoparticles for its antimicrobial activity against selected plant pathogens	Shobhit Deemed University (SIET)
3	Ms Chhavi Goel	Studies on antimicrobial and antioxidant potential of <i>Adansonia digitata</i>	Shobhit Deemed University (SIET)

### (i) Editorial Board/Review Committee Member for Journals:

1. American Journal of Plant Physiology
2. Asian Journal of Cell Biology
3. Asian Journal of Biotechnology
4. Research Journal of Nanoscience and Nanotechnology
5. Journal of Plant Sciences
6. Asian Journal of Plant Sciences
7. International Journal of Botany
8. Journal of Biological Sciences
9. Ion Channel Update
10. Nanomedicine and Nanotechnology Journal
11. International Journal of Biotechnology and Life Sciences
12. Ion Channel, Patch Clamp and Electrophysiology Research
13. Journal of Eco-friendly Agriculture
14. Indian Journal of Scientific Research
15. International Journal of Engineering
16. American Journal of Science & Technology
17. American Journal of Microbiology and Biotechnology
18. Nanoscience & Nanotechnology-Asia
19. Current Nanoscience
20. Biotechnology

## **(j) Representation in the various Academic/ Administrative Committees:**

### **At BITS, Pilani (1993-2000):**

1. Nucleus Member, Research and Consultancy (R&C) Division.
2. In-charge, Sponsored Research Program at RCD.
3. In-charge, Higher Degree and First Degree Research Program.
4. Member, Research Board.
5. Member Ph.D. entrance committee for Biotechnology.
6. Member, Core Committee, Center for Biotechnology.

### **At Amity University Uttar Pradesh, Noida (2005-2009):**

1. Member, Academic Council
2. Member, Board of Studies for Biotechnology

### **At Amity University Uttar Pradesh, Lucknow Campus (2005-2009):**

1. Member, Research Advisory Board
2. Member, Disciplinary Committee
3. Chairman, Purchase Committee for Chemicals and Consumables
4. Chairman, Faculty Recruitment Committee for Biotechnology
5. Member, Faculty Recruitment Committee for Engineering and Technology
6. Member, Committee for Awards of Scholarships
7. Chairman, Academic Excellence Award Committee for Biotechnology
8. Chairman, Departmental Research Committee
9. Member of Selection Committee for:
  - (a) Administrative Executive, Administrative Officer, Front Office Executive
  - (b) Laboratory Demonstrator, Assistants and Attendants
  - (c) Office Assistants and Computer Operators
10. Chairman, Committee for Pest Free Campus

### **At Shobhit University, Meerut (2009-2011):**

1. Member, Academic Council
2. Member, UGC Inspection Committee
3. Chairman, Board of Studies for Biotechnology
4. Chairman, Commission for Grade Reforms
5. Chairman, Academic Program Committee
6. Member, Committee for Modifying Ordinances for B.Tech., M.Tech. and Ph.D.

### **At IFTM University, Moradabad (2011-2012):**

1. Member, Executive Council
2. Member, Academic Council
3. Member, Planning Board
4. Member, Examination Committee
5. Chairman, Doctoral Research Board
6. Chairman, Board of Studies for Biotechnology
7. Chairman, Faculty Board
8. Member, Pay Revision Committee for IFTMU faculties

#### **At Graphic Era University, Dehradun (2012-2013)**

1. Chairman, Ordinance Committee
2. Member, Executive Council and Academic Board
3. Chairman, Board of Studies and Faculty Board
4. Chairman, Departmental Research Committee

#### **At SRMU, Barabanki (2013-2016)**

1. Member, Executive Council & Academic Council
2. Director & Chief Coordinator, Internal Quality Assurance Cell (IQAC)
3. Chairman, Curriculum Development Committee
4. Chairman, Choice Based Credit System Committee
5. Chairman, Faculty Performance Appraisal & Promotion Committee
6. Chairman, Lateral Entry Equivalence Committee
7. Academic Advisor, ERP
8. Member, Research Board
9. Chairman, Board of Studies
10. Chairman, Institute Research Committee

#### **At Sharda University (2016-18):**

1. Co-ordinator, NIRF, School of Engineering & Technology
2. Member, Doctoral Research Committee, Department of Biotechnology, SET

#### **At KN Modi University (2018-2020):**

1. Dean-Academics
2. NAAC SAR committee member

#### **At Shobhit University (2020-till date):**

1. Dean-Academics
2. Dean-School of Bioengineering & Life Sciences
3. Chairman NIRF committee
4. Chairman, Examination Committee and Result Moderation Committee
5. Chairman, National Education Policy 2020 Implementation Committee

#### **At Other Universities:**

1. Member, Board of Studies for Biotechnology at UP Technical University
2. Advisory Member, Biotechnology Syllabus at Rajasthan Technical University
3. Advisory Member, Biotechnology Syllabus at West Bengal Technical University
4. Member (External Expert), Faculty Board, Faculty of Engineering, Integral University, Lucknow
5. Member (External) Choice Based Credit System Implementation Committee, Integral University, Lucknow

#### **UGC, AICTE, NIRF and NBA Coordination:**

1. Prepared Mandatory Disclosures for submission at AICTE on behalf of Amity Institute of Biotechnology, Lucknow (AIB-L).

2. Coordinated UGC Inspection and documentation for Amity University Uttar Pradesh for its constituent institute AIB-L.
3. Coordinated Inspection and documentation for ISO 9001:2000 and ISO 14000:2004 for Amity Institute of Biotechnology, AUUP, Lucknow.
4. Coordinated Inspection and documentation for ISO 9001:2008 for Shobhit University, Meerut.
5. Coordinated UGC Inspection and documentations for School of Biotechnology, Shobhit University, Meerut (twice).
6. Coordinated UGC Inspection and documentation at GEU, Dehradun.
7. Coordinated UGC Inspection and documentation at SRMU, Barabanki. Appointed Coordinator of UGC Expert Committee visit.
8. Coordinator-NIRF for School of Engineering, Sharda University.
9. Advisor-NBA at IILM-AHL CET.

**(k) Development of Institutes/ Centers/ Schools:**

1. The Center for Biotechnology was created at the Biological Science Group. I was the Member of the core committee of the center. The core committee comprises eight faculty members from Biological Science, Chemistry, Physics and Pharmacy Groups.
2. Amity Institute of Biotechnology, Lucknow (AIB-L), A constituent institute under Amity University Uttar Pradesh (AUUP) was created in 2005 and I joined as the Faculty, Deputy Director and founder Head of the institute. Since joining I was delegating the duties as officiating Director. At the time of my joining AIB-L total earning was INR 90 lakhs and when I left AIB-L in August 2009 the earning was elevated to over INR 12 crores. I was instrumental in designing and developing all the laboratories at AIB-L and recruitment of faculties. I was also involved in promoting R&D efforts at AIB-L.
3. During my tenure the Center for Advanced Research in Biosensor Technology was created as its founding Director. It was an advance research center in the area of Biosensor and Bioelectronics.
4. School of Biotechnology at Shobhit University, Meerut was created in 2007 and I have taken over as its first Director in August 2009. Since then I was involved in improvement of existing infrastructure and course curriculum. I was instrumental in the creation of Central Instrument Facility of the University. I was also responsible in promoting R&D activities within the School. On behalf of SBT, I have signed three MoUs through the SBT with various companies for training and R&D bilateral collaborations
5. During my tenure the Shobhit University- Quantum NanoScientific (SU-QNS) Center for Excellence in Bio-informatics was created with the help of Melbourne -Chennai based company Quantum NanoScientific. and Nanotechnology
6. Signed MoU on behalf of IFTM University, Moradabad with Life Science Foundation of India (LSFI) for Academic and Research collaborations between both centers, ultimately the creation of IFTM-LSFI program on Nano-biotechnology.
7. Appointed as Founding Director at the Institute of BioScience and Technology (IBST) a constituent institute of Shri Ramswaroop Memorial University, Barabanki. Introduced several academic courses at the IBST and developed curriculum for those courses and laboratories.
8. Created the Department of Life Sciences at Dr. KN Modi University at Newai, Rajasthan.

**Organization of Conference/Seminar/ Workshops as Chairman/ Convener:**

1. Workshop on Bioinformatics Techniques organized jointly with Bioinformatica Solution, Lucknow at Amity Institute of Biotechnology-Lucknow (AIB-L) in October 26, 2005.
2. National Conference on Nano-biotechnology in joint collaboration with NBRI-Lucknow hosted partly at NBRI and AIB-L in March 22-25, 2006.
3. National Seminar on Genomics and DNA Finger Printing at AIB-L on September 1-2, 2007.
4. International Conference on Nanoscience and Nanotoxicology jointly with Indian Nanoscience Society and IITR-Lucknow (AIB was Academic partner)
5. National Conference on Eco-friendly Agriculture jointly with DKVS-Lucknow at AIB-L November 28-30, 2008.
6. National Seminar on Nanotechnology organized at Shobhit University, Meerut on March 23, 2010.

7. National Conference on Genes and Genomes at Shobhit University, Meerut August 28-29, 2010.
8. National Workshop on Drug Discovery at Graphic Era University on November 10-12, 2012.
9. National Conference on BioMechanics and Annual Meeting of Society of BioMechanics-India, April 1-3, 2013.
10. International Conference on Advances in Biophysics (ICAB-2015), Suzhou, China March 18-20, 2015 **(Technical Program Committee Member and Invited speaker)**.
11. Conferences on Advances in Cell Biology (CACB-2015), Reston, VA, USA; March 20-23, 2015 **(Technical Program Committee Member)**.
12. International Conference on Biochip, Biosensor and Bioelectronics (ICBBB-2015), Shanghai, China; September 18-20, 2015 **(Technical Program Committee Member and Invited speaker and session chairman)**.
13. 6<sup>th</sup> World Conference on Biotechnology, New Delhi; October 5-7, 2015 **(Organizing Committee Member and invited speaker)**.
14. Conferences on Advances in Cell Biology (CACB-2016), Los Angeles, CA, USA; March 18-20, 2016 **(Technical Program Committee Member and Invited speaker)**.
15. International Conference on Advances in Biophysics (ICAB-2016), Los Angeles, CA, USA March 18-20, 2016 **(Technical Program Committee Member and Invited speaker)**.
16. 2nd Int'l Conference on Biochips, Biosensors and Bioelectronics (ICBBB-2016), Sanya, China, December 1 to 3, 2016 **(Technical Program Committee Member and Invited speaker)**.
17. 3rd Conference on Advances in Cell Biology (CACB-2017) Xi'an, China, March 18 to 20, 2017 **(Technical Program Committee Member and Invited speaker)**.
18. 19th International Conference on Biomechanics and Biological Engineering; ICBBE Osaka March 30-31, 2017 ICMCA San Diego 2017, **(Technical Program Committee Member and Invited speaker)**.
19. 3rd International Conference on Biomaterials and Applications (ICBA 2017) Guilin, China, July 20 to 22, 2017. **(Technical Program Committee Member and Invited speaker)**.
20. 20th International Conference on Sports Medicine and Research; ICSMR Amsterdam August 6-7, 2018 **(International Scientific Committee Member)**.
21. 20th International Conference on Applied Biomechanics, ICAB Zurich September 13-14, 2018 **(International Scientific Committee Member)**.
22. International Conference on Applications of Biotechnology and Agriculture Engineering, Kuala Lumpur, Malaysia, February 11 - 12, 2019. **(International Scientific Committee Member)**.
23. International Conference on Recent Developments in Molecular Electronics, Venice, Italy, April 11 - 12, 2019. **(International Scientific Committee Member)**.
24. International Conference on Sustainable Technologies for Agriculture and Applications of Agricultural Biology Paris, France, April 18 - 19, 2019. **(International Scientific Committee Member)**.
25. International Conference on Biosensors and Nanobiosensors, London, United Kingdom, April 24 - 25, 2019. **(International Scientific Committee Member)**.
26. International Conference on Biosensors and Nanobiosensors, London, UK, April 23-24, 2020 **(International Scientific Committee Member)**.
27. International Conference on Bioprocess Engineering and Biotechniques, Bangkok, Thailand, August 20-21, 2020 **(International Scientific Committee Member)**.
28. International Conference on Biomaterials and Tissue Engineering, London, UK, January 21-22, 2021 **(International Scientific Committee Member)**.
29. International Conference on Mechatronics, Electronics and Automation Engineering, Venice, Italy, August 12-13, 2021 **(International Scientific Committee Member)**.
30. International Conference on Bioengineering and Systems Biology, Toronto, Canada, September 20-21, 2021 **(International Scientific Committee Member)**.
31. International Conference on Biochemical, Bioprocess and Biomedical Engineering, Istanbul, Turkey, January 28-29, 2022 **(International Scientific Committee Member)**.
32. International Conference on Molecular Physics and General Principles, Rio de Janeiro, Brazil, March 04-05, 2021 **(International Scientific Committee Member)**.
33. International Conference on Bioengineering and Biomedical Engineering, Lisbon, Portugal, April 15-16, 2021 **(International Scientific Committee Member)**.



34. International Conference on Synthetic Biology and Metabolic Engineering, Paris, France, July 19-20, 2021 (**International Scientific Committee Member**).
35. **International Conference on Biomedical Engineering and Science**, May 03-04, 2023 in Singapore, Singapore (**International Scientific Committee Member**).

### **Organized a Faculty Development Program as Organizing Chairman**

Theme: Interactive sessions on Effective Teaching- Learning Process at SRMU, Barabanki; July 6-11, 2015.

### **PROFESSIONAL AFFILIATIONS**

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| 1. International Association for Plant Biotechnology           | 11. Indian Society of Biomechanics                  |
| 2. International Society for Bioelectromagnetism               | 12. Indian Nanoscience Society                      |
| 3. Indian Science Congress Association                         | 13. The Biotech Research Society of India           |
| 4. Indian Biophysical Society                                  | 14. Society of Biotechnologists in India            |
| 5. Indian Society for Technical Education                      | 15. Society of Plant Biochemistry and Biotechnology |
| 6. Indian Association of Nuclear Chemists and Allied Sciences. | 16. Institute of Nanotechnology, Sterling           |
| 7. New York Academy of Sciences                                |   |
| 8. Sigma Xi- The Scientific Research Society                   |   |
| 9. Indian Society of Cell Biology                              |   |
| 10. Biomedical Engineering Society of India                    |   |

### **Award and Honours**

1. Recipient of most prestigious Creativity Encouragement Program for Young Scientists project award from Ministry of Science and Technology, Govt. of India in 1989.
2. Delivered ISCA Young Scientists Award Lecture 1992 and 1993.
3. Received Society of Bioscience Lecture Award-1996.
4. Received Young Scientist's Award Gold Medal -1997 at the 35<sup>th</sup> World Congress of Natural Medicines, Tirupati.
5. Received Ministry of Science and Technology, Govt. of India Travel Abroad Grants for Young Scientists.
6. Received Junior Chamber International (JCI) -Outstanding Young Persons Award (Trophy)-1998.
7. Recipient of Ministry of HRD, Govt. of India Scholarship (1987-1989) and Department of Biotechnology Fellowship (1989-1991).
8. Recipient of Dr. Ramesh Gulrajani Memorial Award-2006 for Outstanding Research in Electrophysiology by the International Society for Bioelectromagnetism, Minneapolis, MN, USA
9. International Academic Leader Award 2020-21, International Institute of Organized Research
10. National Award "Elite Teacher" (Teachers Day) 2021, International Institute of Organized Research
11. Visited Germany, Japan, Singapore, Sri Lanka, Thailand, UK and USA to deliver lectures, attending conferences and research activities.

### **Patent Published**

**Title of Invention:** Electrical biosensor for early detection of graft compatibility in plants

**Inventors:**

1. Rajiv Dutta
2. Ashok Kumar Mishra

**Application No. :** 706/DEL/2009, C.B. R. No. 2636.

Patent # 31481 (The Patent Office Journal October 2010 page # 126) "Electrical Biosensor for Early Detection of Graft Compatibility in Plants" with International Classification G01N27/00.

### **Patent Ready for Filing**

The research shows that peptide GsMTx4 isolated from venom from spider *Grammostola*, has unique quality to stop pollen tube growth instantly at certain concentration and condition. This technology be may be used for breeding purpose as an alternative to emasculation of anthers.

## Book Published

“3D PRINTING TECHNOLOGY IN NANOMEDICINE” Edited by me (Prof. Dr. Rajiv Dutta) as Sr. Editor along with two colleague editors Dr. Nabeel Ahmad from IFTM University, Moradabad and Dr. P. Gopinath from IIT, Roorkee. Published by ELSEVIER INC.USA in April 2019,

## PUBLICATIONS

### (a) Peer Reviewed:

1. **Dutta, Rajiv** (1994) Computer optimization of relative growth of callus cultures of Poplar (*Populus deltoids*); Modern Trends in Biotechnology; 51-54; CREIID, BITS, Pilani.
2. **Dutta, Rajiv** (1996) Electrically induction of growth, proliferation and differentiation: A novel *in vitro* approach; Bioelectromagnetism **17**; 174-178.
3. **Dutta, Rajiv** (1996) Electrical influence on the movement of certain PGRs; BEMS Letters **132**; 2-4.
4. Sharma, V.N. and **Dutta, Rajiv** (1996) Mass scale propagation of *Rosa hybrida*; Recent Advances in Biosciences; 211-212.
5. **Dutta, Rajiv** (1997) The immobilized cell reactor for Taxol production from *Taxus baccata*; Journal Society of Bioengineers, India, **2**, 41-45 (1997)
6. **Dutta, Rajiv** (1997) Biotechnology in Environmental Management; Environmental Conservation with Sustainable Development (Edited by Dr. A. K. Sinha et al.) Chapter 5; 51-61; APH Publishing Corporation, New Delhi.
7. **Dutta, Rajiv** (1997) Bioelectric augmentation of growth and differentiation in *Nicotiana tabacum*: The physiological evidence to the phenomenon; The FASEB Journal **11(9) Suppl.**; 1031.
8. **Dutta, Rajiv** (1998) Analysis of electrical distribution in callus: A possible marker for differentiation; BEMS Letters **137**; 210-214.
9. **Dutta, Rajiv** (1998) Electrical influence on polar movement of certain phytohormones; Biotechnology in Agriculture and Environment (Eds. S.S. Marwaha et al.); 50-51; PSCST, Chandigarh
10. **Dutta, Rajiv** (1999) Bioelectricity and Plants; Electromagnetic fields in biological system (Edited by Dr. M.H. Weisenseel) pp. 98-100; Alan R Liss, New York.
11. **Dutta, Rajiv** (1999) Measurement of *in vitro* growth by image processing; Comp. Biol. Applications; 677-683.
12. **Dutta, Rajiv** (2000) Electrical influence during growth and morphogenesis; BEMS Letters **140**, 126-129.
13. **Dutta, Rajiv** (2000) The electrical properties of plant membranes; Bioelectromagnetism **21(1)**, 63-66.
14. Gupta, Amrita and **Dutta, Rajiv** (2000) Electrical control of gravitotropic movement in *Brassica*; Bioelectromagnetism, **21(9)**, 51-54.
15. Schoenkecht, Gerald, Spormaker, Petra, Steinmeyer, Ralf, Bruggeman, Liubov, Ache, Peter, **Dutta, Rajiv**, Reintanz, Godde, Hedrich, Rainer and Palme, Klaus (2002); KCO1 is a component of the slow-vacuolar (SV) ion channel; FEBS Letters **511**, 28-32.
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43. Sahai, Pragati and **Dutta, Rajiv**; Microbial production of nanoparticals and their applications; Current Research in Microbiology, 1-22; ISBN: 978-93-87500-01-3 (Invited Review).
44. Aisha Khatoon, Farheen Khan, Nabeel Ahmad, Sibhghatulla Shaikh, Syed Mohd. Danish Rizvi, Shazi, Shakil, Mohammad H. Al-Qahtani, Adel M. Abuzenadah, Shams Tabrez, Abo Bakr Fathy Ahmed, Ahmed Alafnan, Hayatul Islam, Danish Iqbal and **Dutta, Rajiv**; Silver nanoparticles from leaf extract of *Mentha piperita*: Eco-friendly synthesis and effect on acetylcholinesterase activity (2018) Life Sciences 209, 430-434.

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47. Sahai, Pragati, Sinha, Vimlendu Bhushan and **Dutta, Rajiv** (2019) The insight to green revolutionary approaches in agriculture; Acta Scientific Agriculture (Invited Editorial), 3, 11, 02-10.
48. Shukla, N., Deo, M.N., Uttam, K.N. and **Dutta, Rajiv** (2021) Biochemical Evaluation of the Bottle Gourd (*Lagenaria Siceraria*) Fruit By Nondestructive Fourier Transform Raman and Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy; Plant Cell Biotechnology and Molecular Biology. 22 (45-46), 95-102.
49. Pandey, AK, Siddiqui, Mohammad Haris and **Dutta, Rajiv**; Drug-Likeness prediction of designed novel analogues of Thiolactomycin standard targeting FabB enzyme regulation in *P. falciparum* (Communicated)
50. Okologo, ME, Rai, SK, Devada, GS, Sahai, Pragati , Ahmad, Nabeel and Dutta' Rajiv; Eco-friendly approach for the synthesis of silver nanoparticles from leaf and flower extract of *R.indica* and *C.roseus* (Communicated)

**(b) Invited/ Keynote Lectures:**

1. **Dutta, Rajiv** (1992) Electrical control of growth and differentiation in *Nicotiana tabacum* and *Populus deltoides*; Proceedings Part III, Section of Biochemistry, Biophysics and Molecular Biology, 79<sup>th</sup> Indian Science Congress, Vadodra, pp. 11-12 (**ISCA Young Scientist Lecture Award -1992**).
2. **Dutta, Rajiv** (1993) Electro-stimulation of growth, proliferation and differentiation *in vitro*: A novel biological technique; Proceedings Part III, Section of Biochemistry, Biophysics and Molecular Biology, 80<sup>th</sup> Indian Science Congress, Goa, pp. 14-15 (**ISCA Young Scientist Lecture Award -1993**).
3. **Dutta, Rajiv** (1995) Electro stimulation of undifferentiated growth, shoot proliferation and differentiation in plants: A novel biological phenomenon; National Symposium on Recent Advances in Biosciences, Rohtak, November 3-5, 1995 Abstract No. 65. (**Young Scientist Award Lecture**)
4. Prathibha, N, Bhavin C. Shah and **Dutta, Rajiv** (1997) Technological improvement in production of diosgenin through *in vitro* grown callus of *Kallstromea pubescens*; 35<sup>th</sup> World Congress on Natural Medicines, Tirupati, March 14-16, 1997 (**Young Scientist Award-1997**).
5. **Dutta, Rajiv** (1997) Electrical influence on geotropism in beans; University of SW Louisiana, Lafayette, USA, August 27, 1997.
6. **Dutta, Rajiv** (1997) Bioreactor design and analysis for production of diosgenin; DADE International, Miami, Florida, USA, August 30, 1997.
7. **Dutta, Rajiv** (1997) Protoplasmic fusion under micro gravity; NASA Microgravity Laboratory, Huntsville, USA, August 31, 1997.
8. **Dutta, Rajiv** (1997) Piezoelectricity in bone-A novel factor in healing; World Congress of Integrated Methods in Healings, Colombo, Sri Lanka, November 27, 1997 (Key note address).
9. **Dutta, Rajiv** (1997) Problems during scaling-up of plant tissue culture processes; University of Kandy, Kandy, Sri Lanka, November 28, 1997.
10. **Dutta, Rajiv** (1998) Automation techniques for plant tissue culture; National Institute of Agro biological Recourses, Tsukuba, Japan, June 18, 1998.
11. **Dutta, Rajiv** (1998) Electrical influence during *in vitro* pollen germination in *Hibiscus rosa sinensis*: Understanding the pollination mechanism(s); Center for Cell and Tissue Culture, Kyoto University, Kyoto, Japan, June 27, 1998.
12. **Dutta, Rajiv** (1998) Promoting Scientific Temper: A challenging mission; **OYP-1998 Lecture**, Junior Chamber International, New Delhi, October 26, 1998.
13. **Dutta, Rajiv** (1999) Bioelectric Sensors; Division of Electronics, BARC, Mumbai (27<sup>th</sup> June 1999).
14. **Dutta, Rajiv** (2003) The need of gravitotropism and space biology in India; IIT Kharagpur 50 year celebration at Chicago, June 21, 2003.
15. **Dutta, Rajiv** (2007) Nanopores involved in polarized growth of Lilly pollen tube (Key note address) National conference on Nano, Bio and Information Technology Integration March 23-25, 2007; SIEM, Mathura.

16. **Dutta, Rajiv** (2007) "Oscillating electrical potential at tip region of growing pollen tube: An Indicator to polarized growth"; International Conference on Bioelectromagnetism (ICBEM-2007) Fukushima, Japan October 18-22, 2007.
17. **Dutta, Rajiv** and Robinson, KR (2008) Blocking Pollen growth by peptide GsMtx4: A possible boon for Plant Breeders; National Conference on Eco-friendly Approaches in Sustainable and Horticulture Production, AIB, Lucknow, November 28-30, 2008.
18. **Dutta, Rajiv** (2009) Mechanics of polarized cellular growth in plants; National Conference on Biomechanics, IIT-Roorkee, March 7-8, 2009.
19. **Dutta, Rajiv** (2009) Macro-Engineering Options for Climate change management; National Seminar on Global Warming-Global Warning; RG College, Meerut, Nov, 27-28, 2009.
20. **Dutta, Rajiv** (2009) Bionics: The physico-mechanical technology; National Symposium on Cellular and Molecular Biophysics, CCMB, Hyderabad, January 22-24, 2009.
21. **Dutta, Rajiv** (2010) Patch clamp studies on the soma, dendrite and axons; Brain Awareness workshop, IIT, Allahabd, March 20-21, 2010.
22. **Dutta, Rajiv** (2010) Biologically inspired nanomaterials; National Workshop on Nanomaterials, Shobhit University, Meerut, March 27, 2010.
23. **Dutta, Rajiv** (2010) Mechanically activated channels in growing pollen tube and its resemblance in heart muscles cells in chick; International Conference on Frontiers in Biological Science, NIT, Rourkela October 1-3, 2010.
24. **Dutta, Rajiv** (2010) Recent Advances in Nanobiotechnology; National Conference on nanotechnology: Current Research Trends and Commercialization; QNS Indo Asian Center for Nanotechnology, Bangalore, October 27, 2010.
25. **Dutta, Rajiv** (2010) Mechano-sensitive voltage gated nanopores: The Physics of polarized cell growth; International Conference on nanobiotechnology: An interface between Physics and Biology, JMI, New Delhi, December 2-4, 2010.
26. **Dutta, Rajiv** (2011) Nanopore Analysis and Patch Clamp Studies on Cell Membrane; AICTE Staff Development Program, Vivekanandha College of Engineering for Women, Trichengode, TN, June 13, 2011.
27. **Dutta, Rajiv** (2011) Identification and Characterization of Membrane Nano-pores; Workshop on Nanobiotechnology: Present & Future Prospective, Meerut Institute of Engineering and Technology, Meerut; November 22-26, 2011 (Resource Person).
28. **Dutta, Rajiv** (2011) Patch Clamp Technique: Past, Present and Future; Workshop on Nanobiotechnology: Present & Future Prospective, Meerut Institute of Engineering and Technology, Meerut; November 22-26, 2011 (Resource Person).
29. Jain, Pankaj Major, Jain, Shikha and **Dutta, Rajiv** (2011) Future Prospects of Nanotechnology in Veterinary Surgery; National Seminar on Nanoscience and Nanobiotechnology: Present & Future Porspectives; Meerut Institute of Engineering and Technology, Meerut; November 26, 2011.
30. **Dutta, Rajiv** (2012) Mechano-sensitive Membrane Nanopores and Polarized Cell growth; National Conference on Newer Horizons and Innovations in Biotechnology & Biosciences (NHIBB-2012), April 7-8, 2012, Faculty of Engineering and Technology, RBS Engineering Technical Campus, Agra.
31. **Dutta, Rajiv** (2013) FET based Sensor Identifying and Quantifying Cellular Communication through Specialized Structure at Interfacial Cell Wall for Graft Success in Plants 2nd International Conference on Biosensor & Bioelectronics, June 17-19, 2013, Chicago, USA.
32. **Dutta, Rajiv** (2013) Membrane Stretched Activated Nanopores 13th IEEE International Conference on Nanotechnology; August 5-8, 2013, Beijing, China.
33. **Dutta, Rajiv** (2013) Bionics: Lesson from Nature; International Conference On Advances In Biotechnology And Bioinformatics (ICABB 2013) and X Convention Of The Biotech Research Society, India (BRSI) 25-27 November 2013, Pune, India.
34. **Dutta, Rajiv** (2013) Bioproduction of AgNP and AuNP: An novel eco-friendly process development; 5<sup>th</sup> National Conference on Nanotechnology and Nanomaterials, Lucknow, Nov. 21-23, 2013.
35. **Dutta, Rajiv** (2014) Discovery of Nanopores involved in cell elongation; International Conference on Life Science (ICLS-2014), Vijayawada, January 24-25, 2014.
36. **Dutta, Rajiv** (2014) Nano Conjugates: A Novel way to produce AgNP-Hydrigel-LASP; International Conference on Biodiversity, Bioresource and Biotechnology; Mysore; January 30-31, 2014.
37. **Dutta, Rajiv** (2014) Membrane Nanopores: Mechanosensitive Ion channels and its role in cell elongation; National Conference on Prospective & Trend in Plant Science and Biotechnology; Chandigarh, February 21-22, 2014.
38. **Dutta, Rajiv** (2014) Patch clamp Technique in Nano Drug Discovery; National Workshop on Nanomedicine: Role of Nanomedicines as therapeutic agents against multi-drug Resistant Pathogens; Integral University, Lucknow; March 7-9, 2014.

39. **Dutta, Rajiv (2014)** Mechanosensitive Ion channels responsible for cellular elongation; International Biophysics Congress 2014-Satellite Symposium Mechanosensory Transduction, Queensland, Australia, July 31st to August 2nd, 2014.
40. **Dutta, Rajiv (2014)** Development of LASP-AgNP-HG conjugates for diagnostics and management of Acute lymphoblastic leukemia (ALL); NANOCON-2014 the 3rd International Conference on Nanotechnology, Bharati Vidyapeeth University, Pune, October 14-15, 2014.
41. **Dutta, Rajiv (2014)** Calcium influx through pressure activated membrane channels; XXXVIII All India Cell Biology Conference, CDRI, Lucknow December 10-12, 2014.
42. **Dutta, Rajiv (2015)** Role of Pressure Sensitive Ion Channels in Cellular Elongation: The Biophysics of Membrane Physiology; International Conference on Advances in Biophysics, Suzhou, China March 18-20, 2015.
43. **Dutta, Rajiv (2015)** Mechano-Sensitive Channel Responsible for Cellular Elongation; Conference on Advances in Cell Biology; Reston, Virginia, USA, March 20-22, 2015.
44. **Dutta, Rajiv (2015)** Biomarker Based on Interfacial Electrical Resistance produced by Plasmodium: A Novel Technology in Hybrid Breeding; 6 International Conference on Biomarkers and Clinical Research, Toronto, Canada, August 31 to September 2, 2015.
45. **Dutta, Rajiv (2015)** FET based Bio-Sensor for measuring Cellular Communication through Inter-facial Cells for identifying Graft Success rates in Plants; International Conference on Biochips, Biosensors and Bioelectronics, Shanghai, China Sept 18-20, 2015.
46. **Dutta, Rajiv (2016)** Nanopore biophysics: The mechanism of cellular elongation; 2nd International Conference on Advances in Biophysics (ICAB 2016), Los Angeles, USA, March 18 to 20, 2016.
47. **Dutta, Rajiv (2016)** Role of Weak Electrical Current in Cell Elongation: The Novel Phenomenon in Cellular Differentiation, 2nd Conference on Advances in Cell Biology (CACB 2016), Los Angeles, March 18 to 20, 2016.
48. **Dutta, Rajiv (2016)** Electrical Bio-Sensor for measuring Cellular Communication between Interfacial Cells of root stock and scion in Plants; 2nd Int'l Conference on Biochips, Biosensors and Bioelectronics (ICBBB-2016), Sanya, China, December 1 to 3, 2016.
49. **Dutta, Rajiv (2017)** Green synthesis of metallic nanoparticles and nanoconjugates for diagnostic and therapeutic purposes; International Conference on Biomaterials and Applications (ICBA-2017), Guilin, China; June 20-22, 2017.
50. **Dutta, Rajiv (2018)** A quick method for the in vitro synthesis of gold nanoparticles; International Conference on Biomaterials and Applications (ICBA-2018), Kunming, China; July 14-16, 2018;
51. **Dutta, Rajiv (2018)** Membrane biomechanics during pollen tube extension and growth; International Conference on Applied Biomechanics; September 13-14, 2018, Zurich, Switzerland.
52. **Dutta, Rajiv (2019)** Membrane Nanopore: A typical example of Cellular Bioengineering; 5<sup>th</sup> International Congress on Biotechnology and Bioengineering, June 17-18, 2019, London, UK.
53. **Dutta, Rajiv (2020)** Designing Photobioreactor for large scale production of plant tissue; International Conference on Bioprocess Engineering and Biotechniques, August 20-21, 2020 Bangkok, Thailand.
54. **Dutta, Rajiv (2021)** Mechanical and electrical properties of ion channels in cell membrane and its correlation with biomachine; International Conference on Mechatronics, Electronics and Automation Engineering, Venice, Italy, August 12-13,