Gaurav Pandey

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Education

2013 – 2019 🔖 **Ph.D., IIT Guwahati, India** in Biosciences and Bioengineering.
(Cumulative Performance Index 8.75/10)
Thesis title: *Effects of Chemical and Physical Perturbants in Aggregation and Nano-Scale Self-Assembly of Peptides.*
Under the Supervision of Dr. Vibin Ramakrishnan.

2011 – 2013 🔖 **M.Tech. Bioinformatics, University of Hyderabad, India**
(Cumulative Grade Point Average 9.31/10).
Thesis title: *Meta-Analysis of Epigenetic and Gene Expression Signatures Identifies Novel Regulators of Embryonic Stem Cell Identity.*
Under the Supervision of Dr. Sailu Yellabolina (CR Rao Advanced Institute of Mathematics, Statistics and Computer Science). *First Class with Distinction.*

2007 – 2011 🔖 **B.Tech. Biotechnology, Gautam Buddh Technical University, India.**
First Class (81.06%).

2005 – 2007 🔖 **Higher Secondary (Grade 10+2),** *First Class with Distinction (87.77%).*
Indian School Certificate

2004 – 2005 🔖 **Secondary (Grade 10)**, *First Class with Distinction (85.40%).*
Indian Certificate of Secondary Education

Research Publications

1) Gaurav Pandey, Jahnu Saikia, Sajitha Sasidharan, Deep C. Joshi, Subhash Thota, Harshal B. Nemade, Nitin Chaudhary, and Vibin Ramakrishnan.
Modulation of Peptide Based Nano-Assemblies with Electric and Magnetic Fields. *Scientific Reports,* 2017, doi:10.1038/s41598-017-02609-z

2) Gaurav Pandey, and Vibin Ramakrishnan.
Electric feld assisted inhibition of aggregation in amyloidogenic proteins. *Proceedings of the 35th European Peptide Symposium,* 2018, doi:10.17952/35EPS.2018.268

3) Gaurav Pandey, Sudhir Morla, Harshal B. Nemade, Sachin Kumar, and Vibin Ramakrishnan.
Modulation of aggregation with Electric Field; the scientific roadmap for a potential non-invasive therapy against tauopathies. *RSC Advances,* 2019, doi:10.1039/c8ra09993f

4) Jahnu Saikia, Gaurav Pandey, Sajitha Sasidharan, Ferrin Antony, Harshal B. Nemade, Sachin Kumar, Nitin Chaudhary, and Vibin Ramakrishnan.
Electric Field Disrupts Amyloid Aggregation; Potential Non-invasive Therapy for Alzheimer's Disease. *ACS Chemical Neuroscience,* 2019, doi:10.1021/acschemneuro.8b00490

Patents Filed

International Patent
1) Patent No. WO/2019/012556. Dated 17.01.2019. **Title:** A device treatment of neurodegenerative diseases.

Indian Patents
1) Patent No. TEMP/E-1/36478/2019-KOL. Dated 27.08.2019. **Title:** Peptide-based modulators of amyloidogenic peptides.

2) Patent No. 243/KOL/2015. Dated 09.03.2015. **Title:** Generation and usage of stimulus responsive nanostructures.

3) Patent No. 10258/2016-KOL. Dated 31.03.2016. **Title:** Magnetic hydrocarbon crystals.

Conference Presentations

2019   **G. Pandey,** and V. Ramakrishnan. Physical and Chemical Perturbants of Aggregation in Amyloidogenic Proteins. 26th American Peptide Symposium, (APS 2019), Monterey, USA. (Poster)

2018   **G. Pandey,** J. Saikia and V. Ramakrishnan. Scientific Roadmap for an Electric Field Based Non-Invasive Therapy for Alzheimer's Disease. ACS Publications and the Indian Academy of Sciences joint meeting, Indian Institute of Technology BHU Varanasi, India. (Poster)

   G. Pandey, and V. Ramakrishnan. Electric Field Assisted Inhibition of Aggregation in Amyloidogenic Proteins. 35th European Peptide Symposium, (EPS 2018), Dublin, Ireland. (Poster)

2017   **G. Pandey,** and V. Ramakrishnan. Electric Field Assisted Inhibition of Aggregation in Amyloidogenic Proteins. National Workshop on Fluorescence and Raman Spectroscopy, (FCS 2017), Indian Institute of Technology Guwahati, India. (Poster)

   G. Pandey, J.Saikia, S. Sasidharan, and V. Ramakrishnan. Modulation of Peptide Based Nano Structure Assembly with Physical Perturbants. International Conference on Advances in Biological Systems and Materials Science in NanoWorld, (ABSMSNW 2017), Indian Institute of Technology BHU, Varanasi, India. (Oral)

2016   **G. Pandey,** J. Saikia, S. Sasidharan, and V. Ramakrishnan. Molecular Self-Assembly for Fabricating Bio-Nanomaterials: Design and Applications. Research Conclave, (RC 2016), Indian Institute of Technology Guwahati, India. (Poster)

2013   **G. Pandey,** S.B. Rao, and S. Yellaboina. Meta-Analysis of Epigenetic and Gene Expression Signatures Identifies Novel Regulators of Embryonic Stem Cell Identity. UoH-Academia Sinica Joint Workshop on Frontiers in Biological Sciences, University of Hyderabad, India. (Poster)

2012   **G. Pandey,** S.B. Rao, and S. Yellaboina. Integrative Analysis of Epigenetic and Gene Expression Signature Identifies Novel Regulators of Embryonic Stem Cell Identity. Association of DNA Fingerprinting and Associated Technologies (ADNAT) Convention, CR RAO AIMSCS, Hyderabad India. (Poster)

Teaching Experience

2015-2016   Bioinformatics and Computational Biology, Teaching Assistant, Department of Biosciences and Bioengineering, IIT Guwahati.

Bioinformatics Skills

Languages   C*,Python*, Perl*, LaTeX.
Elementary Proficiency

Bioinformatics Skills (continued)

Public Domain Knowledge	▉ NCBI, RCSB, PDB-SUM, Swiss-Prot.
Sequence Analysis Softwares	▉ BLAST, FASTA, Clustal W,
Molecular Dynamics Simulation	▉ Gromacs.
Docking and QSAR Studies	▉ Gold, SybylX.
Molecular modeling and visualization	▉ Swiss-Modeller, Pymol, Rasmol, Avogadro, Chimera, Discovery Studio, Material Studio.
Web Development	▉ HTML.
Others	▉ Chemsketch, ProCheck, RAST, Cytoscape, Pross, Ribosome.

Technical Skills

Organic Synthesis	▉ Solid Phase Peptide Synthesis.
Biophysical Techniques	▉ Spectroscopy (UV-Vis, Fluorescence, IR, CD, Raman), HPLC, MALDI-TOF, ESI-MS, Microscopy (AFM, TEM, FESEM), Powder XRD, DLS, ITC.

Awards and Achievements

2010   ▉ **Institute Award** for Securing **First rank** in B.Tech. at Department of Biotechnology, IILM College of Engineering and Technology.

2011   ▉ **Qualified Graduate Aptitude Test in Engineering (GATE)** with 94 percentile.

2013   ▉ **Secured second rank** in M.Tech. Course at Department of Biotechnology and Bioinformatics, University of Hyderabad.

        ▉ **Qualified GATE** with 99.9 percentile.

2017   ▉ **First Prize** in Oral presentation at International Conference on Advances in Biological Systems and Materials Science in NanoWorld, IIT BHU.

2019   ▉ Received **International Travel Support** from DST (Department of Science and Technology, India) to attend the 26th American Peptide Symposium held in Monterey, California, USA.

        ▉ Awarded **APS Travel Award** to attend the 26th American Peptide Symposium held in Monterey, California, USA.

Professional Affiliations

Memberships	▉ American Peptide Society, European Peptide Society, Indian Biophysical Society, Society of Biological Chemists, India.