

Aravind Kumar Rengan

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Major Areas of Research/Up to 3 major sponsored projects

Bio-Nanotechnology & Nano-Theranostics.

Targeted Anti-Cancer/Anti-Microbial Nanomedicine.

Ionizing & Non-ionizing Radiation – Oncology.

Major Research Facilities in the Group

In-vivo Micro – CT.

In-vivo Optical Imaging System.

In-vivo Micro Irradiator.

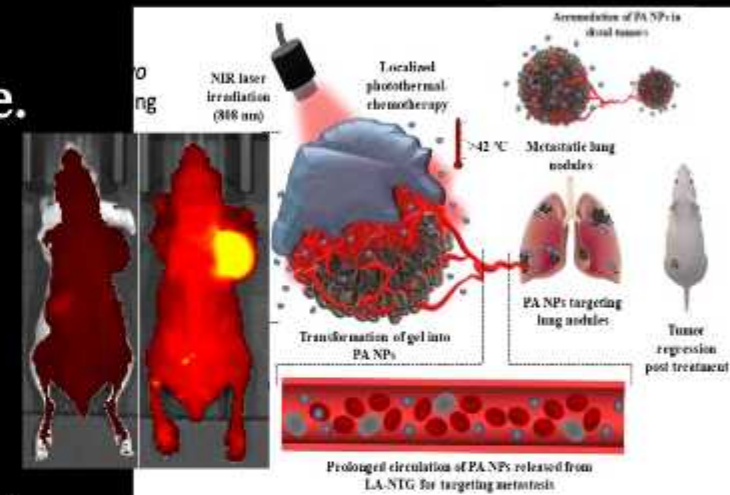
Technology/Product Developed/Up to 3 most significant Publications

Tejaswini Appidi... A K Rengan* et al *Nanoscale*, 2022, 14, 9112.

Syed Alvi ... A K Rengan* et al *ACS Applied Materials and Interface*, 2021, 13, 47, 55862.

Rajalakshmi P A K Rengan* et al *ACS*

Biomacromolecules, 2021, 22, 3926.



Falguni Pati



Associate Professor, BioFabTE Lab, Department of Biomedical Engineering

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Major Areas of Research/Up to 3 major sponsored projects

- 3D Bioprinting of Tissues and Organs for TERM
- 3D Bioprinted Cancer Models for Personalized Treatments
- 3D Bioprinted Micro-physiological Systems for Drug And Toxicity Testing

Major Research Facilities in the Group

- Extrusion-based 3D Bioprinters (Image attached)
- SLA 3D Printers
- FDM 3D Printers
- Rheometer
- Cell culture facility



Technology/Product Developed/Up to 3 most significant Publications

- 3D Bioprinted Corneal Stroma for Partial Keratoplasty
- Biomimetic Hydrogel for Treatment of Blinding Corneal Diseases
- Tissue Specific Bioink for Bioprinting of Human Tissues and Organs
- 3D Printing of Novel Composite's Scaffolds for Cranio-Maxillofacial Reconstruction

- Macromolecular Bioscience 2022:22(8);2200109
- Biofabrication 2022:14(3);032002 ACS Applied Bio
- Materials 2020:4(1):533-544

Harikrishnan Narayanan Unni

Associate Professor, Department of Biomedical Engineering



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Major Areas of Research

- Lab on Chip microfluidics for bioengineering
- Molecular modelling
- Computational Biomechanics

Major Research Facilities in the Group

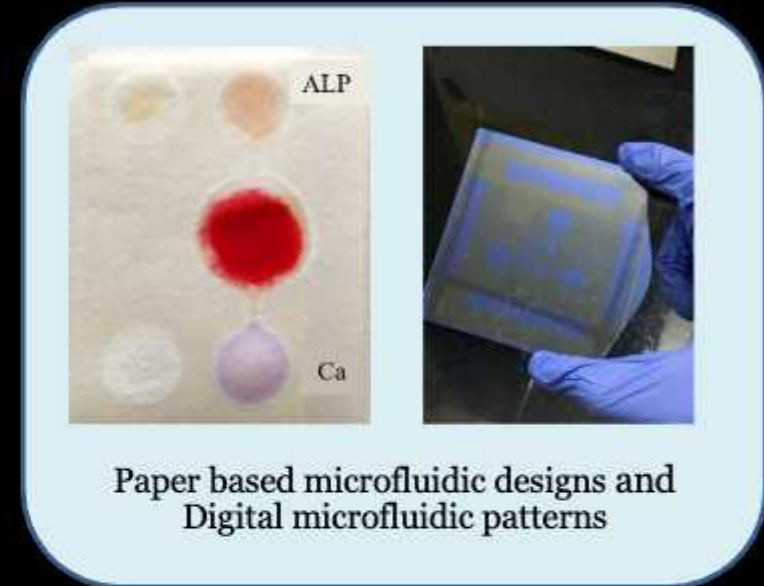
- Microfabrication facility
- Inverted microscope
- High-end workstation

3 most significant Publications

Maneesha Shaji, Mudigunda Sushma, Tejaswini Appidi, Shubha Jain, Aravind Kumar Rangana, Harikrishnan Narayanan Unni, Microfluidic design of tumor vasculature and nanoparticle uptake by cancer cells, **Microfluidics and Nanofluidics**, 25 (46), 2021.

Shubha Jain, Sarpras Swain, Lopamudra Das, Sarita Swain, Lopamudra Giri, Anand Kumar Kondapi, Harikrishnan Narayanan Unni, Microfluidic protein imaging platform: Study of tau protein aggregation and Alzheimer's drug response, **MDPI Bioengineering**, 7(4), 162, 2020.

Manjoosha R. Yerrapragada and Harikrishnan Narayanan Unni, Paper based Microfluidic Device for diagnosis of Osteoporosis markers, **Bioanalysis**, 10 (20), 2018.



Paper based microfluidic designs and Digital microfluidic patterns



Jyotsnendu Giri,

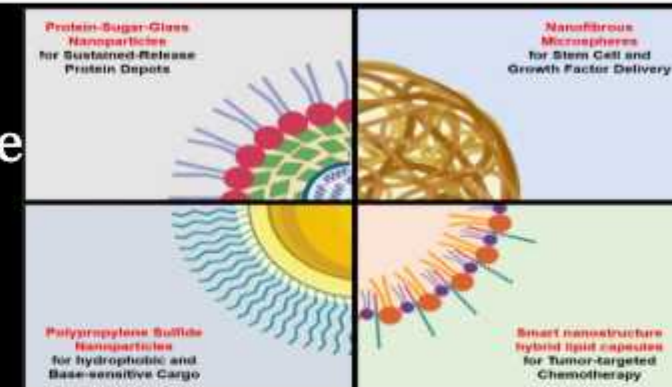
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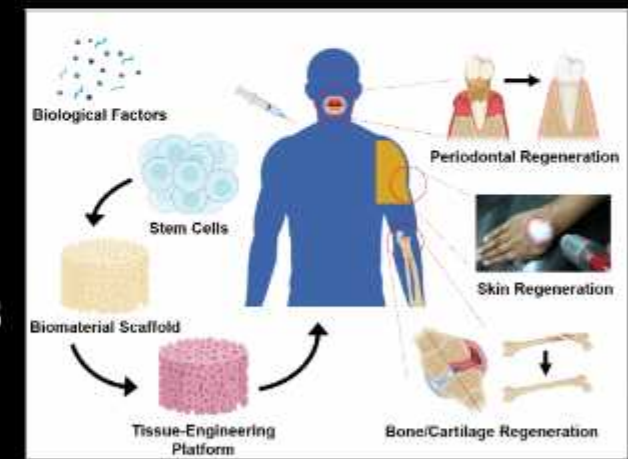
Major Areas of Research

- Novel Biomaterials for Nanomedicine and Regenerative Medicine
- Stem Cell and Regenerative Medicine
- Nanomedicine, Nanotechnology for Therapeutic and Diagnostic
- Drug and Biomolecules Delivery



Major Research Facilities in the Group

- Cryo-Scanning Electron Microscopy
- Biomaterial Fabrication and Characterization Facilities
- Cell Culture and Characterization Facilities



Technology/Product Developed

- Affordable Burn Wound Patch At Patient Bedside For Burn Care
- DuroKea Technology: Affordable Long lasting Hygiene Product
- Nanocarrier for Drug and Gene Delivery

Kousik Sarathy Sridharan

Assistant Professor, neuroTech lab, Department of Biomedical Engineering

Adj. Faculty, Heritage Science & Technology dept

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Major Areas of Research/Up to 3 major sponsored projects

Haptic feedback & immersive experience (DST, PMRF)

Stroke rehabilitation & assessment framework (SERB)

Neuroscience and systems physiology of Hatha Yoga (DST)

Major Research Facilities in the Group

High-density Electroencephalography (HD-EEG)

Functional near-infrared spectroscopy (fNIRS)

High-density transcranial electrical stimulation (HD-tES)

Technology/Product Developed/Up to 3 most significant Publications

Koppula A et al. Feasibility of home-based tracking of insulin resistance from vascular stiffness estimated from the photoplethysmographic finger pulse waveform. *Physiol Meas.* 2022 May 5.

Indigenous intra-operative neuromonitoring system – Technology



Mohan Raghavan

Head & Associate Professor HST, Associate Professor Biomedical Engineering

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Major Areas of Research

Computational Neuroscience

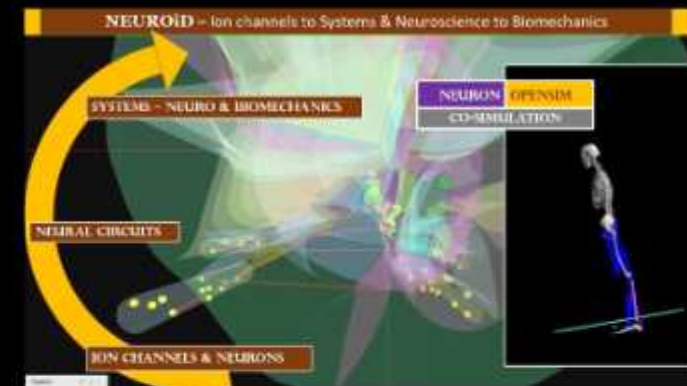
Simulation and modeling of human movement

Experiments in Human movement measurement

ML models of movement understanding

Heritage databases

Neuroscience of Yoga



Major Research Facilities in the Group

Human Gait and movement laboratory

Compute clusters



Technology/Product Developed

NEUROiD – A spinal cord – musculoskeletal movement simulator



భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్
भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Mohd Suhail Rizvi

Assistant Professor, Comp Bio Lab, Department of Biomedical Engineering

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Major Areas of Research/Up to 3 major sponsored projects

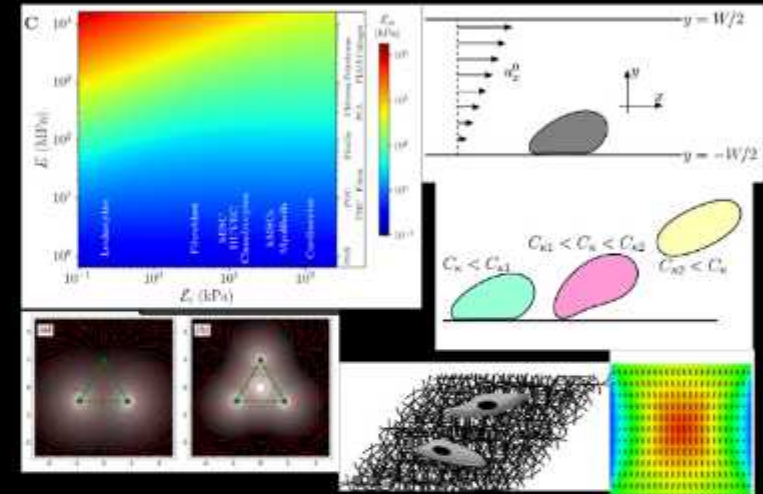
- Constitutive modeling of tissues and their substitutes
- Modeling of gene networks and mechanics in embryonic development
- Biomechanics of cancer metastasis

Major Research Facilities in the Group

- High performance computing

Technology/Product Developed/Up to 3 most significant Publications

- Flow driven vesicle unbinding under mechanosensitive adhesion, Rizvi et al., 2022, Soft Matter
- A reduced model for a phoretic swimmer, Farutin et al., 2022, JFM
- Rheological signature of microswimmer phase-locking under flow, Rizvi et al., 2019, PR Fluids



Subha Narayan Rath

Professor

Regenerative medicine and stem cell lab, Department of Biomedical Engineering

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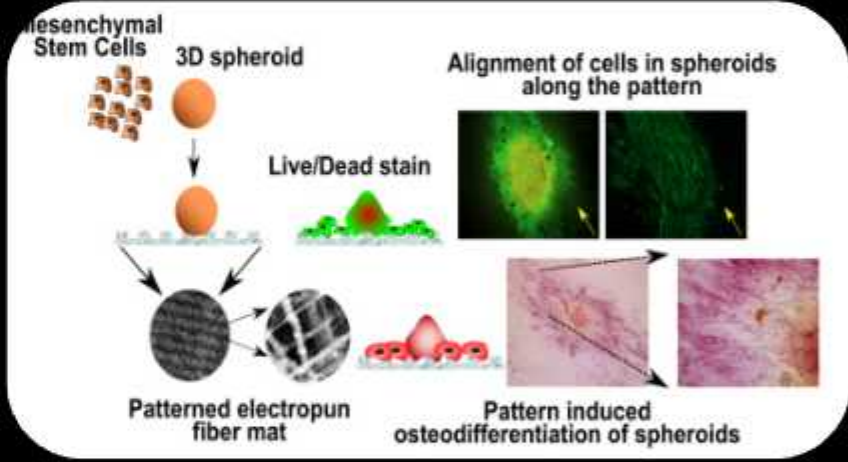


Major Areas of Research/Up to 3 major sponsored projects

- 1. 3D printed bone, cartilage and vessels using stem cells
- 2. Macroencapsulatoin device for diabetes
- 3. 3D printed microfluidic device for drug testing

Major Research Facilities in the Group

- 1. Primary stem cell culture facility
- 2. Bioreactors for mechanical stimulation
- 3. 3D bioprinting facility



Technology/Product Developed/Up to 3 most significant Publications

- 1. 3D printed bone for maxillofacial reconstruction
- 2. Microfluidic device for cancer cell-drug interaction studies
- 3. Electrospun device for allogenic islet cell therapy: [details in link here](#)