



Vel Tech
Rangarajan Dr. Sagunthala
R&D Institute of Science and Technology

IDEAS FOR A HEALTHIER TOMORROW ●●●

School of
**Bio
Engineering**

Department of
Biomedical Engineering

SYMBIOSIS

A BIOMED COLLAB NEWSLETTER

AY: 2025-2026
4th Edition



BIOMEDICAL
ENGINEERING



INNOVATION



RESEARCH



COLLABORATION



GLOBAL PERSPECTIVE



HEALTHIER
COMMUNITIES



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IDEAS FOR A HEALTHIER TOMORROW

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AY: 2025-2026 | 4th Edition

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BIOMEDICAL
ENGINEERING



INNOVATION



RESEARCH



COLLABORATION



GLOBAL PERSPECTIVE



HEALTHIER
COMMUNITIES

Department of Biomedical Engineering

ENGINEERING FOR A HEALTHIER TOMORROW ●●●

Vel Tech is one of the few Institutes offering Biomedical Engineering in Tamil Nadu, with an immense aim of providing a different learning environment to inculcate out-of-box thinking. The department of Biomedical Engineering was established in 2017 under the School of Bio Engineering with an aim to connect engineering and biology. True to its mission, the department is propelling itself to become a major educator in biomedical engineering by employing a diverse workforce. The department has risen to the standards by setting up world class laboratories including Brain Computer Interface (BCI), Biomechanics, Biomedical Instrumentation, and Diagnostic and Therapeutic Equipment.



VISION



To be recognized as an excellent centre in Biomedical Engineering for imparting quality technical education that leads to transformative advancements in healthcare industries.



MISSION



M1

To infuse critical thinking skills by providing a strong foundation that enables the students for continuing education.



M2

To create an ambience of academic excellence with state-of-the-art laboratories to compete globally.



M3

To establish a dynamic research environment that integrates advanced healthcare technologies for innovation and progress.



INNOVATIVE
LEARNING



CUTTING-EDGE
LABORATORIES



INTERDISCIPLINARY
RESEARCH



SKILLED
WORKFORCE



GLOBAL
PERSPECTIVE



SOCIETAL
IMPACT

Editor's Desk

IDEAS | ACHIEVEMENTS | PERSPECTIVES

Dear Readers,

The Editorial Team takes immense pleasure in presenting the **7th Edition** of the annual newsletter **SYMBIOSIS (AY: 2025–2026)** from the Department of Biomedical Engineering.

We begin this edition with an inspiring quote by Nobel Laureate **Carl Wieman**: ***“Education is about learning to make better decisions.”*** This thought truly reflects the spirit of growth and transformation witnessed throughout the academic year.

The year **2025–2026** has been a remarkable journey marked by innovation, dedication, and academic excellence. Both faculty members and students have consistently demonstrated their commitment through outstanding achievements in academics, research, technical activities, and co-curricular engagements.

We take great pride in celebrating these accomplishments and showcasing them through this edition. This year's newsletter continues with an enhanced presentation style, designed to deliver information in a more concise, clear, and visually engaging manner for our readers.

We sincerely hope this issue inspires and informs you. We look forward to returning next year with yet another vibrant edition of **SYMBIOSIS**, bringing you more stories, milestones, and moments that continue to ignite enthusiasm within our department.

*Ideas
Research
Innovation
Impact...*

“
*Education is about
learning to make
better decisions.*

— **Carl Wieman**
Nobel Laureate”

THE SPIRIT OF SYMBIOSIS



ACADEMIC
EXCELLENCE



INNOVATION
& RESEARCH



STUDENT
ACHIEVEMENTS



COLLABORATION
& GLOBAL EXPOSURE



SOCIETAL
IMPACT



Thank You

to our faculty, students, alumni, collaborators and well-wishers
for being a part of this journey.

HoD's Desk

LEADING | INSPIRING | ADVANCING
BIOMEDICAL ENGINEERING

“

I am very happy to present our department's academic progression, specially students and faculty members achievements and accomplishments through this **News Bulletin**.



Dr. D. Balasubramaniam

Head of the Department,
Biomedical Engineering

”



FACULTY RESEARCH ACCOMPLISHMENT

RESEARCH TODAY
FOR A HEALTHIER
TOMORROW



11 Faculty Members have published **64 articles/4 book chapters/books** in peer-reviewed **27 journals** and **33 conferences** indexed in **Scopus** and **Web of Science (WoS)**.



11

Faculty
Members



64

Articles /
4 Book Chapters /
Books



27

Peer-reviewed
Journals



33

Conferences



Indexed in
Scopus and
Web of Science
(WoS)



Full Time PhD Scholars – 1

Faculty Research & Publication Highlights

ADVANCING BIOMEDICAL ENGINEERING THROUGH RESEARCH, INNOVATION AND COLLABORATION

Research and scholarly innovation continue to be important pillars of the Department of Biomedical Engineering. During the academic year, the faculty members of the department have made significant contributions through research publications spanning biomedical engineering, artificial intelligence, medical imaging, healthcare technologies, biosensors, microfluidics, nanotechnology, signal processing, and intelligent systems.

The department's publication portfolio reflects the multidisciplinary nature of Biomedical Engineering and the growing engagement of its faculty in contemporary research challenges. Faculty members have contributed to journals, international conferences, and scholarly book chapters, with several publications indexed in Scopus and Web of Science.

i The publication statistics are based on unique publication titles. When two or more faculty members from the department are co-authors of the same publication, the work is counted once in the department's overall publication total.

RESEARCH AT A GLANCE

INNOVATION | KNOWLEDGE | IMPACT



12

Faculty Members with Publications



64

Unique Publications



27

Journal Articles



33

Conference Papers



4

Book Chapters



50

Scopus Indexed Records



14

Web of Science Records



11 + 5

Q1 Records (Scopus + WoS)

PUBLICATION PROFILE



- Journal Articles 27 (41.5%)
- Conference Papers 33 (52.3%)
- Book Chapters 4 (6.2%)

INDEXING DETAILS



50

Scopus Indexed Records

11

Scopus Q1 Records



14

Web of Science Records

5

Web of Science Q1 Records

FACULTY-WISE PUBLICATION CONTRIBUTIONS

S. No.	Faculty Member / Faculty Group	Total Publications	Journal Articles	Conference Papers	Book Chapters
1	Dr. Kishore Kanna R.	29	11	16	2
2	Dr. Arunachalam P.	7	2	5	-
3	Dr. Muthalakshmi M.	6	5	1	-
4	Dr. Masoodhu Banu N.M.	4	2	2	-
5	Dr. Thiyam Deepa Beeta	4	4	-	-
6	Dr. Hema S.	4	-	4	-
7	Dr. Indumathi R.	3	-	3	-
8	Dr. Saranya G. & Dr. Padmanabha Sarma A.B.S.K.	2	-	2	-
9	Dr. Madeshwari E.	2	-	-	2
10	Dr. Paramasivam A.	2	2	-	-
11	Dr. Balasubramaniam D.	1	1	-	-
Total		64	27	33	4

Research Beyond Numbers



Our faculty publications demonstrate a wide range of research interests and interdisciplinary approaches. The work spans artificial intelligence and machine learning, medical imaging and signal processing, smart and connected healthcare, biomedical sensors and nanotechnology, optimization and intelligent systems, and several other emerging areas.

The involvement of multiple faculty members in collaborative publications highlights the department's commitment to team-based research and the creation of meaningful solutions for real-world healthcare challenges.

KEY RESEARCH AREAS



Artificial Intelligence & Machine Learning

Deep learning
Predictive modelling
Intelligent systems



Medical Imaging & Signal Processing

MRI, EEG, BCI
Tumour detection
Image classification



Smart Healthcare (IoHT / IoMT)

Remote patient monitoring
Chronic disease management
Connected healthcare



Biomedical Sensors & Nanotechnology

Microfluidic biosensors
Electrochemical sensing
Nanomaterials



Optimization & Intelligent Systems

Reinforcement learning
Optimization techniques
Computational approaches

"Research. Collaboration. Innovation. Impact."

With 64 unique publications contributed by 12 faculty members, including publications indexed in Scopus and Web of Science and several Q1-ranked records, the Department of Biomedical Engineering continues to strengthen its research profile and contribute to the future of healthcare.

FACULTY PROPOSAL SUBMISSION HIGHLIGHTS

ACADEMIC YEAR 2025–26 | RESEARCH, INNOVATION & FUNDING PROPOSALS

IDEAS FOR A HEALTHIER TOMORROW

BIOMEDICAL
ENGINEERING
INNOVATION
SOCIETAL IMPACT



8

Proposals



₹1,71,99,750
Total Amount



1

Granted



3

Under Technical
Evaluation



4

Submitted



PROPOSAL PORTFOLIO

FACULTY RESEARCH PROPOSALS FOR AY 2025–26

S.No.	Project Title	Funding Agency	PI	Amount (₹)	Status
1	Design and Implementation of Smart Stress Detector Based on EEG Signal Acquisition and Analysis Unit	TNSCST-Innovation and Product Development (IPD) Project	Dr.R.Kishore Kanna	63,750	Granted
2	AI-Driven BCI-IoMT Framework for Adaptive Cognitive Enhancement in Neurodevelopmental Disorders	Anusandhan National Research Foundation (ANRF)	Dr.R.Kishore Kanna	41,66,000	Under Technical Evaluation ANRF/ARG/2026/009915/ENS
3	AI-Enhanced Wearable Device for Electrogastragram based Diagnosis of Digestive Disorders and Analyzing the Impact of Yoga Interventions	Anusandhan National Research Foundation (ANRF)	Dr. Paramasivam. A	66,00,000	Under Technical Evaluation
4	AI-Driven Driver Cardiac Safety and Autonomous Deceleration System (CARDIAPAC)	Department of Biotechnology [DBT]	Dr.R.Kishore Kanna	40,00,000	Under Technical Evaluation BT/PR/72660
5	AI Wearable Stress Monitor for Workplaces wellbeing	MSME Idea Hackathon 6.0	Dr.R.Kishore Kanna	14,85,000	Submitted
6	Next-Gen Wearable EEG Stress Monitoring Using AI Cloud Integration	EDII-TN- IVP	Dr.S.Hema	2,85,000	Submitted
7	IoT Interfaced Spinal health monitoring module	EDII-TN- IVP	Dr.M.MUTHALAKSHMI	3,00,000	Submitted
8	Portable Edge-AI Skin Screening Device for community health camps	EDII-TN- IVP	Dr. Th Deepa beta Dr. Padmanabha Sarma	3,00,000	Submitted

FUNDING SNAPSHOT

TOTAL PROPOSED AMOUNT: ₹1,71,99,750



₹66,00,000

AI-Enhanced Wearable Device for Electrogastragram based Diagnosis of Digestive Disorders and Analyzing the Impact of Yoga Interventions

Anusandhan National
Research Foundation (ANRF)



₹41,66,000

AI-Driven BCI-IoMT Framework for Adaptive Cognitive Enhancement in Neurodevelopmental Disorders

Anusandhan National
Research Foundation (ANRF)



₹40,00,000

AI-Driven Driver Cardiac Safety and Autonomous Deceleration System (CARDIAPAC)

Department of
Biotechnology [DBT]



₹14,85,000

AI Wearable Stress Monitor for Workplaces wellbeing

MSME Idea
Hackathon 6.0



RESEARCH THEMES

DIVERSE IDEAS | INTERDISCIPLINARY APPROACHES | REAL-WORLD IMPACT



EEG / BCI

Brain signal acquisition
and cognitive enhancement



AI & Wearables

Smart monitoring
for human wellbeing



Digestive Health

Electrogastragram based
diagnostics and yoga interventions



Cardiac Safety

Driver safety and
autonomous systems



IoT & Spinal Health

Connected monitoring
solutions



Edge-AI Skin Screening

Community health
and early detection

Faculty Patents & Innovation Highlights

ACADEMIC YEAR 2025 – 26

INTELLECTUAL PROPERTY | INNOVATION | SOCIETAL IMPACT

The faculty members of the Department of Biomedical Engineering continue to translate their research expertise into intellectual property, developing innovative solutions for real-world healthcare challenges. Our patented innovations focus on biomedical signal acquisition, artificial intelligence, wearable healthcare devices and Internet of Medical Things (IoMT), addressing critical needs in disease monitoring, early diagnosis and community health.

These patents demonstrate the department's commitment to innovation, interdisciplinary research and societal impact. The innovations aim to improve healthcare accessibility, enable early detection and support data-driven clinical decision making through advanced sensing and AI technologies.

i Patent details include application numbers and inventors as per the official submissions. These innovations strengthen the department's intellectual property portfolio and contribute to future research and commercialization opportunities.

PATENT HIGHLIGHTS AT A GLANCE

INNOVATION | PROTECTION | TRANSLATION | IMPACT



PATENT PORTFOLIO

FACULTY INNOVATIONS FOR A HEALTHIER TOMORROW

S. No.	Title of the Invention	Application No.	Inventor(s)	Technology Area	Status
1	Design and implementation of ATmega2560 based EEG signal acquisition and analysis system	202541054509	R. Kishore Kanna	EEG Signal Acquisition and Analysis Biomedical Instrumentation	Filed (Patent Application Submitted)
2	An artificial intelligence-based wearable Internet of Medical Things device for identification of COVID using cough sounds	202541067861	Dr. Paramasivam	AI, Wearable IoMT Respiratory Disease Detection	Filed (Patent Application Submitted)

TECHNOLOGY FOCUS AREAS

IMPACT AND OUTCOMES



KEY INNOVATION FEATURES



FUTURE DIRECTIONS



“Innovative Research. Intellectual Property. Healthier Communities.”

Our faculty patents demonstrate the department's commitment to innovation, interdisciplinary research and societal impact, contributing to a healthier and more connected future.

Department Events Highlights

ACADEMIC YEAR 2025-26

ENGAGE | EDUCATE | INNOVATE | SERVE

Together
for a
Healthier
Tomorrow

The Department of Biomedical Engineering organizes health awareness programs, technical events and innovation platforms to create real-world impact, foster community engagement and provide opportunities for students, faculty and external participants to interact, learn and collaborate.



Community
Engagement



Knowledge
Sharing



Innovation
& Impact

EVENT
01

MEDICAL CAMP

HEALTHY COMMUNITIES, • BRIGHTER TOMORROW



Date
30 April 2026
(Thursday)



Time
09:30 AM – 04:30 PM



Venue
Engineering Hive
7001, 7002



Organized by
**Department of
Biomedical Engineering**



In Association with
**Anderson Diagnostics
& Labs**

SERVICES PROVIDED



Glucose
(Random Blood Sugar)



Blood Pressure



Height, Weight & BMI



Dietitian Consultation



Eye Screening



Dental Screening



OBJECTIVES

- Provide free health check-ups for the community
- Create awareness on healthy lifestyle and preventive healthcare
- Promote early detection of common health issues
- Enable community interaction and social impact initiatives



KEY HIGHLIGHTS

- Free consultation and diagnostic checks
- Participation from students, faculty and volunteers
- Support from healthcare professionals
- Positive response from the community

EVENT
02

BIOSPARK 2K26

IDEAS | INNOVATION | COLLABORATION | IMPACT



Date
6 March 2026
(Friday)



Time
09:00 AM – 04:00 PM



Venue
**Department of
Biomedical Engineering**
(Technical Event)



Organized by
**Department of
Biomedical Engineering**



Registration
<https://veltech.edu.in/bme/biosparx/>

EVENT CATEGORIES



Project Expo



Mini Ideathon



Poster Presentation



Tech Quiz



OBJECTIVES

- Provide a platform to showcase innovative ideas
- Encourage industry interaction and collaboration
- Foster research-driven solutions for real-world healthcare challenges
- Inspire creativity and technical skills among students



KEY HIGHLIGHTS

- Interdisciplinary participation
- Showcase of innovative projects and ideas
- Interaction with industry experts and researchers
- Exciting prizes and recognition for winners
- Hands-on learning and knowledge sharing

OVERALL IMPACT



2
Major Events



Wide
Participation



Health Awareness
& Innovation



Stronger
Community Connect

KEY OUTCOMES



Improved
Community Health
Awareness



Enhanced
Student Engagement
and Skills



Platform for
Innovation and Ideas



Industry and
Societal Collaboration



Real-World
Impact

“Engaging Communities. Inspiring Innovations. Building a Healthier Tomorrow.”

Department of Biomedical Engineering
Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology

Student Mobility & International Exposure Highlights

ACADEMIC YEAR 2025-26

GLOBAL LEARNING, EXCHANGE & COLLABORATION

Our Biomedical Engineering students continue to expand their horizons through global academic exchange, project collaborations, internships and virtual learning opportunities with reputed international institutions. These experiences provide exposure to cutting-edge research, new cultures and global perspectives, strengthening their academic and professional growth.

Global Learning for a Healthier Tomorrow

EXCHANGE & COLLABORATION SNAPSHOT



11

Students with International Exposure



4

Semester Exchange



4

Project



1

Internship



2

Virtual Internship



3

Students with Funding Support
(NTD 2,000 Per Month)



8

Students without Funding Support
(Nil / Nil)

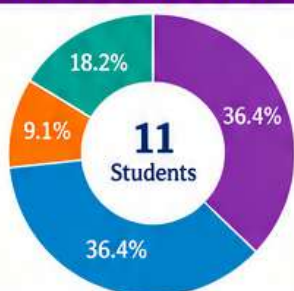
STUDENT MOBILITY PORTFOLIO



PEOPLE | PLACES | PERSPECTIVES | PROGRESS

S.No.	Student Name	VTU No.	Degree	Dept.	Host University	Country	Exchange Type	Funding Support	Duration
1	Ms. KEERTHI VARSHINI SRINIVASAN	VTU21985	B.Tech	BIOMED (AI&HT)	NATIONAL TAIPEI UNIVERSITY OF TECHNOLOGY	TAIWAN	SEMESTER EXCHANGE	Nil	6 MONTHS
2	Mr. DEVENDHIRAN SURESH	VTU23871	B.Tech	BIOMED (AI&HT)	NATIONAL TAIPEI UNIVERSITY OF TECHNOLOGY	TAIWAN	SEMESTER EXCHANGE	Nil	6 MONTHS
3	Mr. ROHITH GADDAM	VTU23634	B.Tech	BIOMED (AI&HT)	NATIONAL TAIPEI UNIVERSITY OF TECHNOLOGY	TAIWAN	SEMESTER EXCHANGE	Nil	6 MONTHS
4	Ms. THRIUMBIGA SRINIVASAN KALAIVANI	VTU24206	B.Tech	BIOMED (AI&HT)	NATIONAL TAIPEI UNIVERSITY OF TECHNOLOGY	TAIWAN	SEMESTER EXCHANGE	Nil	6 MONTHS
5	Mr. DARSHAN SHRESTHA	VTU23292	B.Tech	BIOMED	UNIVERSITY MALAYA	MALAYSIA	PROJECT	Nil	7 MONTHS
6	Ms. NIKITA	VTU22402	B.Tech	BIOMED	NATIONAL CHUNG HSING UNIVERSITY	TAIWAN	PROJECT	NTD 2,000 Per Month	5 MONTHS
7	Mr. ASHWIN MANOJ	VTU23548	B.Tech	BIOMED	NATIONAL CHUNG HSING UNIVERSITY	TAIWAN	PROJECT	NTD 2,000 Per Month	5 MONTHS
8	Mr. YASH SHARMA	VTU23335	B.Tech	BIOMED (AI&HT)	NATIONAL CHUNG HSING UNIVERSITY	TAIWAN	PROJECT	NTD 2,000 Per Month	5 MONTHS
9	Mr. KISHOR SHAHI	VTU23291	B.Tech	BIOMED (AI&HT)	NATIONAL INNOVATION CENTRE	NEPAL	INTERNSHIP	Nil	-
10	LOKESHWARA SARAVANA S P	VTU29800	B.Tech	BIOMED	I DEGREE	SOUTH KOREA	VIRTUAL INTERNSHIP	Nil	-
11	RANCHANA KASTHURI V V	VTU28940	B.Tech	BIOMED	I DEGREE	SOUTH KOREA	VIRTUAL INTERNSHIP	Nil	-

PROGRAMME PROFILE



- Semester Exchange 4 (36.4%)
- Project 4 (36.4%)
- Internship 1 (9.1%)
- Virtual Internship 2 (18.2%)

GLOBAL DESTINATIONS

7 Taiwan

2 South Korea

1 Malaysia

1 Nepal

KEY DESTINATIONS & HOST INSTITUTIONS



National Taipei University of Technology

Taiwan



National Chung Hsing University

Taiwan



University of Malaya

Malaysia



National Innovation Centre

Nepal



I Degree

South Korea

"Global Exposure. Academic Excellence. Real-World Learning."

GLOBAL LEARNING IMPACT

Our students have gained international academic, project and internship exposure across Taiwan, Malaysia, Nepal and South Korea, including semester exchange, project work, internship and virtual internship opportunities, fostering global perspectives and strengthening their academic and professional development.

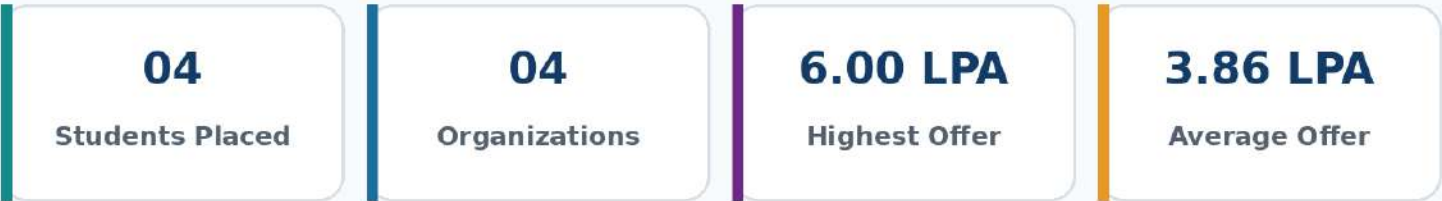
Student Placement Highlights

B.TECH. BIOMEDICAL ENGINEERING | YEAR OF ADMISSION 2021-22

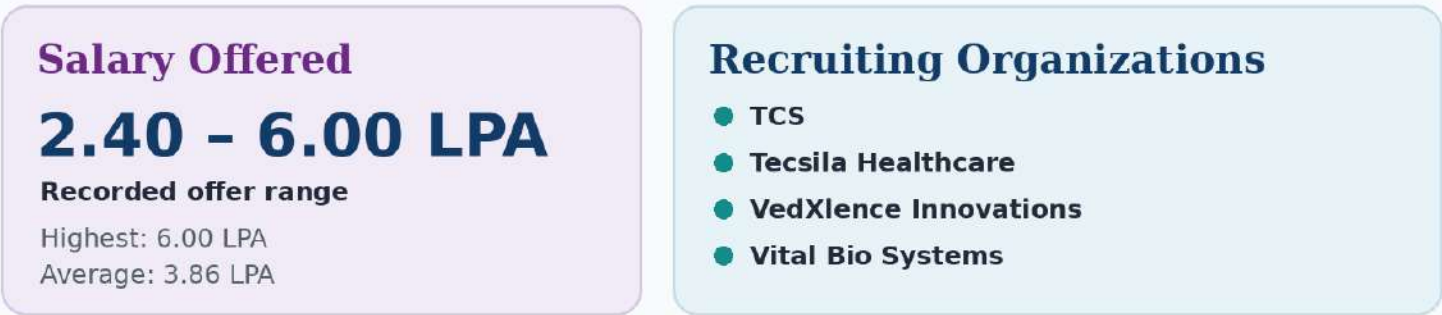


PLACEMENT OUTCOMES AT A GLANCE

The placement records provided for the 2021-22 admission batch show students progressing into healthcare, technology and biomedical-sector organizations, with salary offers ranging from 2.40 LPA to 6.00 LPA.



PLACEMENT PROFILE



STUDENT-WISE PLACEMENT

S.No	Student Name	Organization	Offer	Department
1	Chandra Marthala	TCS	3.45 LPA	B.Tech. – Biomedical Engineering
2	Alby M Biju	Tecnila Healthcare	2.40 LPA	B.Tech. – Biomedical Engineering
3	K. Naga Rohitha	VedXlence Innovations	6.00 LPA	B.Tech. – Biomedical Engineering
4	Shanish Mohammed	Vital Bio Systems	3.60 LPA	B.Tech. – Biomedical Engineering

KEY PLACEMENT OBSERVATIONS

- Sector Diversity** Placements span IT services, healthcare, biomedical innovation and biosystems.
- Offer Distribution** Three recorded offers fall between 2.40 and 3.60 LPA; one recorded offer is 6.00 LPA.
- Biomedical Relevance**