



# International Conference on Translational Biophotonics in Healthcare

**Day 1: 04/02/2026**

<b>Theme: Smart, Wearable, and AI-Enabled Biophotonics</b>			
<b>Serial No</b>	<b>Presenter Name</b>	<b>Title</b>	<b>Poster ID</b>
1.	Sumati Vithalrao Kulkarni	Design of a paper-based wearable microextraction patch for monitoring of volatile metabolic profiling in psoriasis before and after Ayurvedic treatment	S01
2.	Munmun Gharami	Aedes mosquito detection from surveillance images using YOLOv12 integrated with IDX	S02
3.	Adarsh P Nayak	Feature-Enriched Stacked Ensemble Learning for HER2+ Breast Cancer Tissue Image Classification	S03
4.	Anwasha Sarma	High-Fidelity Generative Diffusion Models for Multimodal Translation in Brain Tumour Imaging: Bridging Radiology and Translational Biophotonics	S04
5.	Siddharth Pal	Comparative Assessment of Model-Based and Machine Learning Methods for Time-lapse Fluorescence Image Segmentation of Tissue	S05
6.	Marnin Ruth Vas	Investigation of Starch Elastomers Crosslinked with Citric Acid and Enhanced with Silicon Dioxide Using Raman Spectroscopy	S06
7.	Kausalya Neelavara Makkithaya	Machine Learning integrated Two-Photon Microscopy for Image Analysis of Prostate Cancer Tissue Images	S07
8.	Vivek Bohane	A Weakly Supervised Image Translation Framework for Unregistered Paired Microscopy Images	S08
9.	Sarfaraj Mirza	Physics-Guided Adversarial Learning for Low-Photon Structured Illumination Microscopy Reconstruction	S09
10.	Albin Joseph Shaju	Physics-Informed Machine Learning for Virtual Staining of Unlabeled Oral Tissue: A Preliminary Study	S10
11.	Partha Pratim Pal	Phase Unwrapping using Physics Informed Deep Neural Network	S11

12.	Zahra Mohammed Hanif	Bismuth-Doped ZnO Nanorods for Radioactive Iodine Sensing Toward Wearable and Point-of-Care Applications	S12
13.	Debsmita Mandal	Development of a cost-effective paper-based sampling kit for fast identification of <i>Klebsiella pneumoniae</i> bacterial pathogen	S13
14.	Gayathri Menon	Injectable ionic crosslinkable hydrogel for articular cartilage reconstruction	S14
15.	Abhuri Jahnavi	A Flexible Adhesive SERS Platform for Rapid On-Site Detection of Pesticide Residues	S15
16.	Chakra Sai	Flexible AgNPs-Decorated Aluminium Tape SERS Platform for On-Site Detection of Pharmaceutical Analytes	S16
17.	Somashekar Patil	In Silico Structural Omics of Starch–Amylase Interactions: Docking and Molecular Dynamics Insights into Early Digestive Processing	P17
18.	Sanjeeb Pradhan	Polyethylene Glycol-Functionalized MXenes for Enhanced Photocatalytic Degradation of Organic Pollutants	S18
19.	Goutam Thakur	Effects of pH and crosslinking on the transport of diclofenac sodium from freeze-dried chitosan scaffolds	S19
20.	Ojasvi Brahme	Green-Synthesized Silver Nanoparticles from <i>Portulaca oleracea</i> L. as a DNA-Based Diagnostic Platform for Chromosomal Abnormalities	S20
21.	Sharmila Sajankila Nadumane	Optical detection of Cadmium using Polypyrrole/BCN/Carbon quantum dot composite	S21
22.	Nandita Laxmi Banan	Synthesis of CQDs from plant-based materials for antibiotic sensing	S22
23.	Dr. Sourav Roy	Introducing C.H.R.I.S.T Lab-Additive Manufacturing & Coating Driven Devices: C.O.R.E	S22
24.	Dr. Chandima J. Narangoda	Modified Chitosan Coated Fabrics for Biophotonic Applications in Healthcare Industry	S24
25.	Dr. Nikhil Pathak	From Static to Dynamic: Harnessing Protein Conformational Changes for Drug Discovery and Precision Medicine	S25

### Theme: Lasers and their applications

Serial No	Presenter Name	Title	Poster ID
1.	Dhanya R Rai	Design of Optical Sensors to Detect Creatinine by Localized Surface Plasmon Resonance Process	L01
2.	Meenakshi Subramanian	Effect of Diode Laser Radiation on Seed Germination and Physio-Biochemical Traits of Ashwagandha - A Multipotential Ayurvedic Medicinal Plant	L02
3.	Sai Sarbani Mund	Investigations on selective pathogen killing with microbiome preservation via optimized antimicrobial photodynamic therapy	L03
4.	Aparna Dubey	Experimental validation of Simarouba glauca leaf extract as natural photosensitizer for inactivation of superbugs	L04
5.	Pooja Shivappa	Chromophore Absorption to Gene Expression: Cellular Mechanisms of Photo biomodulation Therapy in Oral Mucositis	L06
6.	Edwin Pious	Development of a Multimodal Nonlinear Optical Microscope for Oral Cancer Evaluation	L07
7.	Hardik Garg	Studies on Cinnamaldehyde Induced Structural Damage in Post-Photodynamic Therapy Regrowth of Methicillin-Resistant Staphylococcus aureus	L08
8.	Priya Dangi	Probing Silver Nanoparticle Assembly on DNA Origami as a SERS Substrate	L09
9.	Dhanush Koodi M	Development of a Portable Multispectral Microscopic System for Surface Characterization	L10
10.	Mounika Renduchintala	Preparing Label-Free SERS Approach for Trace Adulterants in Honey	L11
11.	Bhavya Chaitanya Darapaneni	Enhanced Raman Fingerprinting of Curcumin and Toxic Dyes in Turmeric Using SERS Substrates	L12
12.	Varad Mahesh Phadke	Development and Optimization of an Optical Imaging System for Cellular study	L13
13.	Shimul Biswas	Optical Probe for Characterizing Structural Changes of Collagen	L14
14.	Bhoomika R Hande	SHG Imaging Reveals Structural Changes in Heat-Moisture Treated Pearl and Finger Millet Starch Granules	L15
15.	Devanshi Soni	Profiling of Low-Scattering Phantoms using Optical Coherence Tomography: A Preliminary Framework for Tissue Characterization	L16
16.	Tharun S	Population-Averaged Quantification of Sperm Swimming Dynamics using Differential Dynamic Microscopy	L17
17.	Mrinal M	Autofluorescence for evaluating protein nitration	L18

18.	Nandana B	Optical and Physicochemical Characterization of Millet Starch by SHG, FTIR, XRD, and SEM	L19
19.	A Melsica Manuel	A statistical study on the effect of the solvent and binder on the particle size of ZnO based ink for additive manufacturing	L20
20.	Subalakshmi Ramprasad	Label free profiling of RBCs to identify high impact morphometric features under Candida albicans infection invitro	L21
21.	Manikanth Karnati	Automated Oral Lesion Classification Using Label-Free Two-Photon Imaging	L22
22.	Devadiga Pooja Bhaskar	Spectroscopic and Microscopic Profiling of Tyrosine Nitration its Implication on Human Health	L23
23.	Paka Sravan Kumar	Assessment of the Metabolic Preconditioning Induced by Snehapana Therapy in the Management of Type II Diabetes	L24

**Day 2: 05/02/2026**

<b>Theme: Biophotonics for Clinical and Precision Healthcare</b>			
<b>Serial No</b>	<b>Name</b>	<b>Presenter Title</b>	<b>Poster ID</b>
1.	Sujal Sahu	Beyond Extraction and Dyes: Redefining Single-Cell Oil Monitoring and Imaging Directly in Micro-Factories	B01
2.	Maryam Abdul Ajees	An Autofluorescence -Based Biosensor for Non-Invasive and Cost-Effective Bilirubin Detection in Neonates	B02
3.	Shakuntala Kumari	Investigations on effect of osmotic stress in healthy and diabetic red blood cells using Diffraction phase microscopy	B03
4.	Sachin Parwani	Label-free discrimination of live and starvation-induced necrotic cells using single-cell micro-Raman spectroscopy	B04
5.	Bhavika D. Vispute	Surface Enhanced Raman Spectroscopy of Liquid-based Cytology Samples from Human Cervix	B06
6.	Devdas Umesh	Early Prediction and Label Free Detection of Radiation-Induced Fibrosis	B07
7.	Aditi Valame	Biophotonics-Based Assessment and Prediction of Tumor Radioresistance	B08
8.	Sankalp Shandilya	Modelling Composite RBC Membrane Mechanics measured via Diffraction Phase Microscopy	B09
9.	Ameera K	Monitoring Hemoglobin Glycation using LED-Induced Autofluorescence	B10
10.	Pratixa Nanjibhai Sevra	Autofluorescence spectral fingerprinting of breast normal and cancer cells	B11
11.	Dr. Kamalesh D Mambrekar	Single-Cell Raman Tweezer Spectroscopy Reveals Radiation-Induced Biochemical Changes in Human Erythrocytes for Biodosimetry Applications	B12
12.	Pooja N	Biodegradable Starch-Based Elastomeric Microfluidics for Cell Culture Applications	B13
13.	Katyayani Achyut Bhise	Non-enzymatic reagent-free sensing and direct detection of lactic acid in microbial culture	B14
14.	Vasudha Kamath	Fluorescence-Based Assessment of Anticancer Activity of a Docetaxel-Loaded Nanoemulsion in Breast Cancer Cells	B15
15.	Annanya Kapur	Investigation of bipyridine based compounds as anticancer agents in Non-Small Cell Lung Carcinoma	B16
16.	Vishali Shivgotra	Optical spectroscopy-based assessment of probiotic metabolite-induced functional alterations in mesenchymal stem cells	B17
17.	Aradhika Vijeev	Peroxynitrite-Driven Oxidative Remodeling and Aggregation of Hemoglobin: Implications for Redox-Mediated Hemoglobinopathies	B18

18.	Driti Kiran	Bio-Derived Carbon Quantum Dot Mediated Embryonic Grafting for Targeted Enhancement of Graft Union Formation	B19
19.	Yashaswini Reddy	Evaluation of Compounds 3A and 3B as Dual HDAC and Topoisomerase Inhibitors in Human Melanoma Cells	B20
20.	Ipshita Das	Optics- Assisted evaluation of Anticancer Derivatives in MCF-7 and A549 cells	B21
21.	Shruthi Nayak	Isoform-Selective Chloronicotinamide HDAC Inhibitors as Potential Therapeutic Agents Against Neuroblastoma	B22
22.	Sanjana Gupta	Non-Destructive Raman Spectroscopic Profiling of Selected Millet Varieties	B23
23.	Shettigar Anirudh Vasudeva	Sustainable Utilization of Dried Eichhornia crassipes Biomass for the Fabrication of Carbon Quantum Dots; Characterization and Bio-Imaging Applications	B24
24.	Raveena A	Experimental Implementation of Continuous-Wave Diffuse Optical Tomography for Structural Imaging	B25

<b>Review Posters</b>			
<b>Serial No</b>	<b>Presenter Name</b>	<b>Title</b>	<b>Poster ID</b>
1	Rida Khaled	Spectroscopic Detection of Extracellular Matrix Biomarkers in Colorectal Cancer	R01
2	Pooja R Pandit	A Review of Wearable Biophotonic Device Studies for Healthcare Applications	R02
3	Ummu Salma Kuriyodath	Early Detection of Cervical Cancer: A Review of Screening Methods, Challenges and Future Detection	R03
4	Jasmine Binoy	Review of Rice Starch Modification Techniques: FTIR-Based Structural Changes and Their Influence on Glycemic Index	R04
5	Megha Raythatha	Spectroscopy in Cancer detection	R05
6	Ramya Savithri K	Chalcone-Based Chromophores for Bioimaging Applications	R06
7	Nagashree G A	Biophotonics Approaches to Detect and Combat Bacterial Virulence Factors in the Wound Microenvironment	R07
8	Neil Viren D'Souza	Naphthoquinone-Based Biosensing Approaches: Chemical Mechanisms and Emerging Opportunities	R08
9	Caitlyn Susan John	Fluorescence imaging of rice chromosomes using Carbon Quantum Dots	R09
10	Arpitha Rao	Nanogel Based Strategies for Blood Brain Barrier Penetration in Targeted Drug Delivery	R10
11	Annora Bernadette D'Souza	Nano-engineered Biomaterials for Localized Drug Delivery in Dental Therapies	R11
12	Akriti Baliga	Histone Deacetylase Inhibitors for Imaging in Biophotonics: Molecular Probes for Cancer Detection and Therapy Monitoring	R12
13	Prerna Hegde	Optical Microscopy for Investigating Cellular Dynamics of Melanogenesis	R13
14	Swarnim Rajkumar Ambastha	Seaweed-Derived Carbon Nanodots: Green Synthesis and Application in Nontoxic Live-Cell Imaging	R14
15	Srikrishna Kedlaya Herga	Optical Biosensing of Streptococcal Metabolic Fingerprints for Early Oral Cancer Detection	R15