Name: Dr. Shahila Parween
Senior Research Scientist
✉ Shahila.fri@mnrindia.org, shahi912@gmail.com
+91-040-23890835 (Ext. No: 470)
Google Scholar Citations: ***https://scholar.google.com/citations?user=9bX2cGYAAAAJ&hl=en***

SUMMARY

Experienced Senior Research Scientist with a proven track record in developing affordable Point of Care assay devices. Has successfully developed a prototype for lipid profiling, whole blood glucose monitoring, paper-based blood group typing, subclinical mastitis detection, image-based ELISA, and ultra-fast ELISA for cytokines detection. Adept in developing novel methods for quantitative measurement of therapeutics and biomarkers. She has a strong experience of more than 14 years in biosciences and biomedical research which is evidenced by her high-impact publications in internationally leading journals.

Dr. Shahila Parween has acquired her Ph.D. (Biological Sciences) and high-quality postdoctoral studies at two flagship research institutes of the Council of Scientific and Industrial Research (CSIR), Government of India, namely the Institute of Genomics and Integrative Biology (IGIB) and the Centre for Cellular & Molecular Biology (CCMB) respectively. Currently, she is working as a Senior Research Scientist at MNR Foundation for Research & Innovations (MNR-FRI), MNR Medical College & Hospital, Telangana, India. Apart from research, she has good experience in incubation and entrepreneurship and had conducted Gandhian Young Technological Awards 2020 (GYTI-2020) and Biotech Innovation Ignition School (BIIS) organized by SRISTI-BIRAC. She has successfully conducted various national-level workshops/conferences in close association with BIRAC, DBT, Govt. of India.

Experience: 9 + experience in biosciences and biomedical, affordable diagnostics.

Research Interests

At MNR FRI my team aims focus on developing novel and low-cost point-of-care (POC) diagnostic methods with applicability for commercialization.

Diagnosis is the most important part of human health care, disease control, proper medication, and treatment. Healthcare industry transformation is required from hospital centered to proactive person-centered care which focuses on individuals' well-being. The consequence of delayed diagnosis not only raises the cost of treatment but also results in unavoidable deaths. For a diagnostic technology to be unbeaten in resource-limited countries, it is important that it should follow the guidelines provided by World Health Organization (WHO) i.e. diagnostic devices for developing countries should be ASSURED: Affordable, Sensitive, Specific, User-friendly, Rapid and robust (results available in less than 30 minutes), Equipment free and Deliverable to end-users. The emergence of point-of-care tests (diagnostic testing done at or near the site of care) has the potential to improve health-care services in diverse settings, especially in cases of poor health service or laboratory infrastructure. Recently paper- based diagnostic research has emerged as a zero-cost analytical device in third-world countries that lack access to expensive diagnostic infrastructures**.**

Research Areas: Microfluidics. Paper Based Devices. Point of Care Detection (POC). Non-conventional methods to fabricate microfluidic devices. Lateral flow assays. Nanoparticle Synthesis. Affordable Diagnostics. Lateral flow assays. Chemical activation of biopolymers. Immobilization techniques. Medical devices. ELISA. Immunoassay methods. Nanomaterial for biosensing. Biomarkers. Image Analysis. SDS-PAGE. Scanning Electron microscopy (SEM). Western blot. Microbiological Techniques. Correlation & Regression analysis.

<u>Ongoing Projects Details as a Principal Investigator</u>

2023-2025	**Research Project:** Remodeling Technology Integrated Validation of Ayurveda Jihva: Corroborating Saam Jivha Pariksha to Multiple Biomarker Detection Using Point of Care Paper-based Device. **Funding Agency: The IKS Division of Ministry of Education@AICTE, Govt. of India. (Sanctioned Amount: Rs. 968000/-)**
2022-2024	**Research Project:** Nanoparticle Enthused Point of Care, Assay Device Aiming Simultaneous Detection and Severity Status of Acute Pancreatitis. **Funding Agency: DST SERB Start-up Research Grant (SERB-SRG), Govt. of India,** Science and Engineering Research Board (SERB) File Number: SRG/2022/000576, **(Sanctioned Amount: Rs. 2472854/-)**

2022-2024 **Research Project:** Ultrafast detection of Complete thyroid profiling by ELISA assay.
Funding Agency: Seed Funding from MNR Educational Trust.

Completed Projects Details as a PI

2021-2022 **Research Project:** Developed ultrafast immunoassay protocol for HIV detection.
Seed Funding from Rapid Diagnostics Pvt. Ltd. Delhi, India
Achievements: Patent application under process.

2019-2021 **Research Project:** Developed on-farm easy mastitis detection devices, a novel milk adulteration sensor.
Seed Funding of 10 lakhs from Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI), India
Achievements: Completed. Patent filed for "A Microfluidic Kit for Detection of Subclinical Mastitis" Patent Application No. 202121017693.

AWARDS/HONORS

1. **Best Researcher Award** 01/2022 – 12/2023
   Golden Jubilee Celebration of MNR Educational Trust. The event was presided over by the Honorable President of India
   - For actively engaging in research activities and capable of bringing government funds to the organization.
2. **Appreciation Award** 25.04.2023
   Foundation Day Celebration of MNR Educational Trust.

3. **International Postdoctoral Fellowship** 2020
   Selected for Research Associate - READ UTI (FT), Loughborough University, United Kingdom.

4. **DS Kothari Post-Doctoral Fellowship** 2020
   Awarded (Higher Fellowship) by University Grants Commission (UGC), Government of India.

5. **Post-Doctoral Fellowship for Women** 2017
   Awarded by University Grants Commission (UGC), Government of India.

6. **CSIR-Nehru Science Postdoctoral Fellowship** 2017

Awarded by Council of Scientific & Industrial Research (CSIR), Government of India.

7. **SERB National Postdoctoral Fellowship** 2016
Awarded by the Department of Science and Technology, Government of India

8. **CSIR/UGC-NET** 2009
Awarded fellowship for 5 years during Ph.D. by Govt. of India.

PATENT

1. Microfluidic Device for Detection of Subclinical Mastitis. 2021. Indian Patent Shahila Parween Patent Application No. 202121017693

Selected Publications

1. Microfluidics-Based Blood Typing Devices: An In-Depth Overview.
2023. ACS Appl. Bio Mater. Jayachandran, **S. Parween**, A. Asthana, and S. Kar. 2024, 7, 1, 59–79. **(IF: 4.7).** https://doi.org/10.1021/acsabm.3c00995

2. Sensitive and rapid Bradford and BCA protein assay by a common desktop scanner.
2023. Biomedicine. **Shahila Parween*,** Pradip Nahar, 2023; 43(1): 439-443. https://doi.org/10.51248/.v43i01

3. Fundamentals of Image-Based Assay (IBA) System for Affordable Point of Care Diagnostics.
2022. Microchemical Journa. **Shahila Parween*,** Amit Asthana, Pradip Nahar. Volume 186, 2023, 108345, ISSN 0026-265X, (IF: 5.3). https://doi.org/10.1016/j.microc.2022.108345

4. Cross-linked chitosan biofunctionalized paper-based microfluidic device towards long term stabilization of blood typing antibodies.
2020. International Journal of Biological Macromolecules.. **Shahila Parween** et al. Volume 163, 15 November 2020, Pages 1233-1239. **(IF: 6.3).** https://doi.org/10.1016/j.ijbiomac.2020.07.075

5. An affordable, rapid determination of total lipid profile using the paper-based microfluidic device.
2019. Sensors & Actuators, B: Chemical. **Shahila Parween**, P Debishree Subudhi, Amit Asthana. 285 (2019) 405–412 **(IF: 7.1).** https://doi.org/10.1016/j.snb.2019.01.064

6. Ultrafast image-based ELISA for sensitive detection of cytokines in allergen-induced asthmatic samples.

2017. Microchemical Journal.. **Shahila Parween**, Gaurav Singh, Pradip Nahar. 135, November 2017, Pages 26-32, **(IF: 5.3).** https://doi.org/10.1016/j.microc.2017.07.013

7. Ultraminiaturized assay for rapid, low-cost detection and quantification of clinical and biochemical samples.
   2016. Biomedical Microdevices. **Shahila Parween** and Pradip Nahar. 18(2):33 **(IF:2.9).** https://doi.org/10.1007/s10544-016-0059-x

8. Image-based ELISA on an activated polypropylene micro test plate —A spectrophotometer-free low-cost assay technique.
   2013. Biosensors and Bioelectronics. **S. Parween**, P. Nahar. 48 (2013) 287–292, **(IF: 7.7).** https://doi.org/10.1016/j.bios.2013.04.020

9. Femtogram detection of horseradish peroxidase by a common Desktop scanner.
   2015. J Biosci Bioeng. **S. Parween**, P. Nahar. 119(1):113-6, **(IF:2.2).** https://doi.org/10.1016/j.jbiosc.2014.06.004

10. Reply to "Image-based ELISA on an activated polypropylene micro test plate—A spectrophotometer-free low-cost assay technique.
    2015. Biosensors and Bioelectronics. **S. Parween**, P. Nahar. 63, 605-608, **(IF: 7.7).** https://doi.org/10.1016/j.bios.2013.04.020

Seminar and Conferences

- ✓ KVS Ratnam, & **Shahila Parween***. (2024). Simple & Innovative Approaches for Point-of-Care Pancreatic Enzymes Detection in Paper Devices. 7th International Conference on Recent Trends in Bioengineering (ICRTB 2024), 37. https://doi.org/10.5281/zenodo.10522788.

- ✓ Coordinated & Organized one-day Training Program titled "Regulations and Guidelines for Clinical & Academic Research" on 23rd Dec. 2022. Honorable Speaker: Dr. Sudhakar Bangera, AILEEN Clinical Research Services AILEEN, India.

- ✓ Coordinated **"Virtual Global Bio-India Road Show February 26, 2021,** Theme: Developing Biotech Enterprises Based on Traditional Knowledge & Contemporary Innovations: Expanding Herbal Potential., SIIE – SRISTI BioNEST, In association with BIRAC, DBT, Govt. of India.

- ✓ **Shahila Parween** and Amit Asthana "Development of a Paper-Based Analytical Device for Point of Care Diagnostics" 2nd National Post Doc Symposium, 3rd-5th Oct 2018, Centre for Cellular and Molecular Biology, Hyderabad.

- ✓ **S. Parween**, P. Nahar "A Novel Image-based Diagnostic Assay on a Polypropylene Surface Engineered by Photochemical Activation" the APA International Conference on Polymers: Vision & Innovations, February 19-21, 2014, at India Habitat Centre, New Delhi.

- ✓ **Shahila Parween,** Saroj Kumar, and Pradip Nahar "Image-Based Protein Assay by a Common Desktop Scanner" the International Conference and XI Convention of The Biotech Research Society, India, on Emerging Trends in Biotechnology (ICETB-2014) 6-9 Nov, Jawaharlal Nehru University, New Delhi.

- ✓ Rajesh Ahirwar, **Shahila Parween,** Ishita Rehman, Swati Tanwar and Pradip Nahar, Photocolorimetric detection of oligonucleotides. "81st Annual Meeting of the Society of Biological Chemists (India) & Symposium on Chemistry and Biology: Two Weapons against Diseases. Science City, Kolkata (W.B). November 8-11, 2012.

- ✓ **Shahila Parween** and Pradip Nahar**,** "LOW-COST nano-ELISA THAT DOES NOT REQUIRE COSTLY ELISA READER AND MICROTITER ELISA PLATE" 81st Annual Meeting of the Society of Biological Chemists (India) & Symposium on Chemistry and Biology: Two Weapons against Diseases. Science City, Kolkata (W.B). November 8-11, 2012.

- ✓ **Shahila Parween,** TEACHERS TRAINING WORKSHOP ON MICROORGANISM "LET US OBSERVE & LEARN" 25-27 August 2009, organized by "Millennium India Education Foundation" and "Amity International School, Saket, New Delhi."

- ✓ **Shahila Parween,** National Seminar on "Biotechnology and Human Welfare", March 19-20, 2007, Department of Biotechnology, Jamia Hamdard, New Delhi.

- ✓ **S. Parween**, P. Nahar "A Novel Image-based Diagnostic Assay on a Polypropylene Surface Engineered by Photochemical Activation" the APA International Conference on Polymers: Vision & Innovations, at India Habitat Centre, New Delhi.

Membership of Professional Societies/Associations/Others

- Life Member of Indian Science Congress Association (Membership No. L19658).

- Coordinating the MNR Institutional Ethics Committee, EC/NEW/INST/2020/1169, MNR-EC-BHR, MNR MEDICAL COLLEGE AND HOSPITAL, MNR NAGAR, FASALWADI SANGAREDDY, Sangareddy, Telangana - 502294.

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Press Coverage to work

- o Publication on the paper-based device to determine lipid profile is covered by The Hindu, published on Feb 02, 2019, with a title "CCMB uses a paper-based device to determine lipid profile".

- o Publication on the paper-based device to determine the lipid profile is covered by

https://journosdiary.com/2019/02/02/ccmb-lipid-profile-microfluidic-device

Project Students

K.V.S.Ratnam

Project Associate-I

MNR-FRI

I am a Science graduate from Silver Jubilee Govt Degree College, Kurnool and a Biochemistry postgraduate from Andhra University, Visakhapatnam. I am working on the DST-SERB sponsored SRG Project, SRG/2022/00576, under the supervision of Dr. Shahila Parween, Senior Scientist at MNR FRI. The project title is **Nanoparticle Enthused Point of Care, Assay Device Aiming Simultaneous Detection and Severity of Acute Pancreatitis**. In this project, we are developing a simple point-of-care device to detect the major enzymes that play a crucial role in the detection of acute pancreatitis.

Prajna Jena Arpita

Project Assistant

MNR-FRI

I am Microbiologist from Utkal University, BBSR, Orissa. At MNR FRI I am working on a AICTE, Govt. of India funded project titled “Remodeling Technology Integrated Validation of Ayurveda

Jihva: Corroborating Saam Jivha Pariksha to Multiple Biomarker Detection Using Point of Care Paper-based Device".