Name	**Mohd. Rahil Hasan**
	Ph.D. Scholar (2nd Year)
	• Date of birth: 21-12-1996 (Age **26**) • Supervisor- Dr. Jagriti Narang (NanoBiosensor Lab) • Department of Biotechnology, Jamia Hamdard, New Delhi, India • Mobile: +918077216848 • E-mail: Rahilhasan789@gmail.com
Educational Qualifications	• 2022-Pursuing Ph.D. Biotechnology, Jamia Hamdard, New Delhi, India, (**First Division**). • 2019-M.Sc. Biotechnology. Jamia-Hamdard, New Delhi,India (**First Division**). • 2017-B.Sc.Biotechnology, CCSU, Meerut, UP, India (**First Division**).
Research Interest	• **Designing affordable biosensor-** Commercial potential based biosensor, 3D-printed aptasensor, Wireless potentiostat based pocket sensor, Lateral Flow Assay kit, Paper based biosensor, colorimetric, biosensor, Microfluidic biosensor, Portable, Multiplex – devices smartphone based biosensor and controlling apps. • **Nanomaterials synthesis-** Gold decorated nanocomposites, silver nanoparticles, graphene and zinc nano-composite, diamond based nanomaterial, 2D nanomaterial. • **Viruses-** zika virus, dengue virus, CHIKV
Total no. of Publication	**24**
Total Citation	**460**
Total Impact Factor	**100**
Patent filed	**1**
Total awards	**6**

Recognition / Award/Certificate/Grants

S. No	Received	Presenter	Designation	Venue	Year
1.	**Editor choice award**	Dr. Tejraj	Editor	Sensor-International (Journal)	**2021**
2.	**Most cited article award**	Dr. Tejraj	Editor	Sensor-International (Journal)	**2021**
3.	**Most prompt scholar award**	Dr. Jagriti Narang	Supervisor	Jamia Hamdard University, New Delhi	**2022**
4.	**Project scholarship granted**	ICMR	Indian funding agency	ICMR, New Delhi	**2022**
5.	**Best published paper award**	-	Vice-president of conference	Aligarh Muslim University (AMU), UP	**2023**
6.	**High-Impact research paper award with 5000/- prize money**	Prof. Afsar Alam	Vice-chancellor	Jamia Hamdard University, New Delhi	**2023**

Project-Fellowship:

- The Indian Council of Medical Research (ICMR), New Delhi, India

Lab Position:

- Project Assistant allotted in ICMR based project

Patent filed:

- One patent filed Titled "PBAs detection of polyvalent antigen of four serotypes of dengue virus spiked in human serum utilizing in-house fabrication of paper electrodes".

Research paper:

- **1- Hasan MR**, Sharma P, Pilloton R, Khanuja M, Narang J. Colorimetric biosensor for the naked-eye detection of ovarian cancer biomarker PDGF using citrate modified gold nanoparticles. Biosensors and Bioelectronics: X. 2022 Sep 1;11:100142.

- **2-** Anirudh Bishoyi, Md. Anish Alam, **Mohd. Rahil Hasan**, Manika Khanuja, Roberto Pilloton, Jagriti Narang. Cyclic voltammetric- Paper-Based Genosensor for detection of the target DNA of zika virus. MDPI.2022.

- **3-** Sharma P, Hassan H, **Hasan MR**, Fatima T, Mohan H, Khanuja M, Kaushik S, Narang J. PBIS-based system integrated with zinc–silver nanocomposite for the detection of Chikungunya virus. Biosensors and Bioelectronics: X. 2023 May 1;13:100303. **.(IF-10)**

- **4- Hasan MR,** Sharma P, Shaikh S, Singh S, Pilloton R, Narang J. Electrochemical Aptasensor Developed Using Two-Electrode Setup and Three-Electrode Setup: Comprising Their Current Range in Context of Dengue Virus Determination. Biosensors. 2022 Dec 20;13(1):1. **(IF-5)**

- **5**-Tyagi M, Singh S, **Hasan MR,** Fatima T, Khanuja M, Narang J. Lab in tube: comparing different morphological dependent gold nanomaterials towards naked eye and optical sensing of dopamine using aptamer. International Journal of Environmental Analytical Chemistry. 2023 May 1:1-4.

- **6-** Pradakshina Sharma, **Mohd. Rahil Hasan**, Manika Khanuja, Rachna Rawal, Shivani Shivani, Jagriti Narang. Aptamer based silver nanoparticle decorated paper platform for electrochemical detection ovarian cancer biomarker PDGF. Material chemistry and physics. 2023.

- **7-** Sharma P, Hasan MR, Khanuja M, Narang J. Carbon ink printed flexible glove-based aptasensor for rapid and point of care detection of Chikungunya virus. Process Biochemistry. 2023 Aug 2.

Review paper:

- **1**-Alam MA, **Hasan MR**, Aznar N, Suleman S, Narang J. Diagnostic approaches for the rapid detection of Zika virus–A review. Process Biochemistry. 2021 Feb 1;101:156-68.

- **2-** Aznar N, **Hasan MR**, Akram M, Yadav N, Narang J. Systematic and validated techniques for the detection of ovarian cancer emphasizing the electro-analytical approach. Process biochemistry. 2020 Jul 1;94:126-35.

- **3- Hasan MR**, Sharma P, Aznar N, Pundir CS, Pilloton R, Narang J, Shetti NP. Analytical methods for detection of human cytomegalovirus clinched biosensor a cutting-edge diagnostic tool. Biomedical Engineering Advances. 2021 Jun 1;1:100006.

- **4-** Beduk T, Beduk D, **Hasan MR,** Guler Celik E, Kosel J, Narang J, Salama KN, Timur S. Smartphone-Based Multiplexed Biosensing Tools for Health Monitoring. Biosensors. 2022 Jul 29;12(8):583.

- **5-** Hassan H, Sharma P, **Hasan MR**, Singh S, Thakur D, Narang J. Gold nanomaterials–The golden approach from synthesis to applications. Materials Science for Energy Technologies. 2022 Sep 18.

- **6-** Sharma P, **Hasan MR,** Mehta NK, Bishoyi A, Narang J. 92 years of zinc oxide: has been studied by the scientific community since the 1930s-An overview. Sensors International. 2022 Jun 3:100182.

- **7-** Singh S, **Hasan MR**, Sharma P, Narang J. Graphene nanomaterials: The wondering material from synthesis to applications. Sensors International. 2022 Jun 23:100190.

- **8-** Aznar N, **Hasan R**, Tyagi M, Yadav N, Narang J. Carbon nanotube-A review on Synthesis, Properties and plethora of applications in the field of biomedical science. Sensors International. 2020 Jan 1;1:100003.

- **9- Hasan MR**, Anzar N, Sharma P, Singh S, Hassan H, Rawat C, Narang J. Mycobacterium tuberculosis diagnosis from conventional to biosensor-a systematic review. International Journal of Environmental Analytical Chemistry. 2022 Nov 25:1-6.

- **10-** Thakur D, Fatima T, Sharma P, **Hasan MR**, Malhotra N, Khanuja M, Shukla SK, Narang J. High-performance biosensing systems for diagnostics of Sexually transmitted disease–A strategic review. Process Biochemistry. 2023 Jan 13.

- **11- Hasan MR** , Sharma P, Shariq Suleman , Shouvik Mukherjee , Emine Guler Celik , Suna Timur , Roberto Pillton and Jagriti Narang. PAPERTRONICS-Marriage between Paper and Electronics becoming a real scenario in resource-limited settings.ACS.2023.

- **12-** Singh S, **Hasan MR**, Jain A, Pilloton R, Narang J. LFA: The Mysterious Paper-Based Biosensor: A Futuristic Overview. Chemosensors. 2023 Apr 19;11(4):255.

- **13-** Hasan MR, Anzar N, Sharma P, Malode SJ, Shetti NP, Narang J, Kakarla RR. Converting biowaste into sustainable bioenergy through various processes. Bioresource Technology Reports. 2023 Jul 5:101542.

Book-Chapter:

- **1-Hasan MR,** Suleman S, Narang J. Lab-on-paper based devices for COVID-19 sensors. InSensing Toolsand Techniques for COVID-19 2022 Jan 1 (pp. 25-47). Elsevier.
- **2-Hasan MR**, Anzar N, Tyagi M, Yadav N, Narang J. Lab-on-a-chip devices—Advancement in the designing of biosensors. InFunctionalized Nanomaterials Based Devices for Environmental Applications 2021 Jan 1 (pp. 175-198). Elsevier.
- **3-**Sharma P, **Hasan MR,** Narang J. Bio-inspired Protein-Based Nanoparticles in Cancer Therapy. InHandbook of Oxidative Stress in Cancer: Therapeutic Aspects 2022 Mar 18 (pp. 1-24). Singapore: Springer Singapore.
- **4-**Malode SJ, Sharma P, **Hasan MR,** Shetti NP, Mascarenhas RJ. Carbon and carbon paste electrodes. InElectrochemical Sensors 2022 Jan 1 (pp. 79-114). Woodhead Publishing.

Top Co-authors:

- **Roberto Pilloton:** CNR-IC, Area della Ricerca di RM1, Via Salaria km 29.3, Monterotondo, Rome, I-00015, **Italy**
- **Suna Timur**-Central Research Test and Analysis Laboratory Application and Research Center, Ege University, 35100 Izmir, **Turkey**

  -Department of Biochemistry, Faculty of Science, Ege University, 35100 Izmir, Turkey

Future outlook-

- Multiplex biosensors, wearable biosensors, 2D-3D nanomaterial-based sensing, origami based platform, LFA, portable potentiostat and UV-vis spectroscopy, 3D designing based biosensors, drone/ unmanned /robot integrated biosensor, colorimetric kit, smartphone-based biosensor, and their diseases-controlling apps.
- Inclined towards futuristic terms- Papertronics, portronics, Plaspertronics, lab-on-paper, Lab-in-tube, lab-on-body, lab-on-chip, lab-on-drone/ lab-on-sky, organ-on-chip.

Experience:

- Two-year research experience in nano-biosensor lab and worked on **UGC**-based project titled Ovarian cancer biomarker PDGF based biosensor, two different biosensors were developed i.e., Colorimetric biosensor and Potentiometric biosensor, And also published these two biosensors-based research in science direct journals along with the review article on ovarian cancer biosensors. **(2019-2020)**
- Two-year research experience in nano-biosensor lab and working on **ICMR-**based project titled "multiplex paper based aptasensor for the detection of DENV and CHIKV at the point of care need. **(2021-2023)**

Conferences:

- National conference on "Biotechnology for sustainable development and human welfare" organized by department of biotechnology, school of chemical and life sceinces (SCLS), Jamia Hamdard, New Delhi, India, from 23rd-24th November, **(Volunteer) 2022**
- Aligarh Muslim University, UP **(Poster presentation)** Award received, **2023**
- BARC-Mumbai **(Poster presentation), 2023**

Scientific Writing:

- Review writing, figures/graphs designing, and research structuring.
- Having a good knowledge of communicating the papers with suitable journals as well as their ethics guidelines.

Dissertation:

- To evaluate the cytotoxic potential of different extracts of rosemary via MTT assay under the guidance of **DR. SAIMA WAZID** (Department of Biotechnology, JAMIA HAMDARD, New Delhi).

Expertise:

- **Instrumentation- BSL-2,** Potentiostat, Smartphone based sensor, TEM, Ultrasonicator, UV-Vis-spectrophotometer,Hydrothermal Autoclave.
- **Fabrication technique-** Fabricate screen-printed electrodes for lab-on-chip devices.
- **Biosensor designing –** LFA (Lateral flow assay) manufacturing**,** 3D printing.
- **Nano techniques**- Synthesis of nanoparticles such as Gold, nanoparticles, and Nano-rods,reduced graphene oxide, sliver, and WS_2.

Computational skills-

- Microsoft Office (Word, Excel, PowerPoint)
- Origin (graphs designing)
- Biorender/PPT (figure formation)

Strength -

- Hard-working, punctual and keep learning new things.
- Can work independently as well as in a team.
- Quick learner.
- Strong capacity to work under pressure

Declaration –

- I hereby declare that the above information provided is true to the best of my knowledge.

(Mohd. Rahil Hasan)