Brief Biodata

Name: Dr. Gajjala Sumana

Designation:	Senior Principal Scientist
DP No. and Name:	Biomedical Metrology Section
DU No. and Name:	Environmental Science and Biomedical Metrology Division
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Date of Joining CSIR-NPL:	8 March 2006
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Research Area/ Interest

- Biomedical Metrology
- Studies on the biorecognition for applications in Clinical diagnostics
- Synthesis and Characterization of ordered materials and Polymers
- Liquid crystals

Educational Qualifications

(Please write latest qualification first)

Degree	Subject	University/ Institute	Year
Ph.D	Chemistry	Defence Research and Development Establishment, Gwalior	1998
M.Sc	Polymer Science	Sri Krishnadevaraya University, Anantapur	1993

Academic / Research Experience

Grade / Post	Institute	Duration		Research Field
		From	To	
Scientist	**CSIR-National Physical Laboratory**	**March 2006**	**Till date**	**Biomedical Metrology, Synthesis and characterization of ordered thin films, Liquid crystals, Biorecognition, Biosensors**

No. of Publications in SCI Journals	No. of Publications in non-SCIJournals	No. of Publications in Conference Proceedings	Books	Total
111		20	1	132

No. of Publications: 132

Selected Publications

1. Technological Advancements in Bio-recognition using Liquid Crystals: Techniques, Applications, and Performance., Rajesh, LK Gangwar, SK Mishra, A Choudhary, AM Biradar, G Sumana, Luminescence: the Journal of Biological and Chemical Luminescence (2022) DOI: 10.1002/bio.4242
2. Tri-sodium citrate stabilized gold nanocubes for plasmonic glucose sensing, Chandan Singh,Matthias Thiele, André Dathe, Sophie Thamm, Thomas Henkel, Gajjala Sumana, Wolfgang Fritzsche, Andrea Csáki.Materials Letters, 304, (2021), 130655
3. Ultrasensitive Immunosensor Based on Langmuir–Blodgett Deposited Ordered Graphene Assemblies for Dengue Detection Shipra Solanki, Amrita Soni, V Agrawal, M. K. Pandey and Gajjala Sumana, *Langmuir* , 37 (2021) 8705–8713
4. Langmuir–Blodgett based ordered deposition of functionalized iron oxide nanoparticles for ultrasensitive detection of *Escherichia coli* O157: H7Chandra MouliPandey, Manoj KumarPandey, GajjalaSumana, Microchemical Journal, 181, (2022), 107708
5. Recent progress in the sensing techniques for the detection of human thyroid stimulating hormone, Rajesh, KrishanKumar, Sujeet K.Mishra, PoonamDwivedi, GajjalaSumana, TrAC Trends in Analytical Chemistry, 118, (2019) 666-676
6. Recent developments in biosensors to combat agricultural challenges and their future prospects, Monika Kundu, P Krishnan, RK Kotnala, Gajjala Sumana, Trends in Food Science & Technology, 88(2019) 157-178

Patents

1. Nucleic acid primers and probe for detection of *neisseria gonorrhoeae,* Seema Sood, R.Verma, R.Singh, **G. Sumana,** M. Bala, J.C. Samantaray,M. K. Pandey, B D Malhotra, India and PCT (Malawi, Uganda and Kenya (Granted on 22 May 2018)
2. Silver Nanoparticles Impregnated Nano-porous Carbon Nano-fibers Platform for Biosensor application, Ashutosh Sharma, K. Mondal, B.D.Malhotra, Md. A.|Ali, C. Singh, **G. Sumana, India (Granted on December 28 2020)**
3. A Microbial UVc Disinfection casket, N Singh, Rajesh, V K Jaiswal, P Sharma, **Gajjala Sumana,** A. Krishna R Krishnan, Purohit, S Rathore, D K Aswal, Indian Patent filed (2020)
4. A UVC based ambient air microbial disinfector, N Singh, Rajesh, VK Jaiswal, P Sharma, S.R. R Krishnan, **Gajjala Sumana,** DK Shukla, SG Aggarwal, K Singh, SK Jaiswal and D. K. Aswal, Indian Patent filed (2021)

Current Activities

(Not more than 100 words)

- **Biomedical Metrology**
- **Studies on the biorecognition for applications in Clinical diagnostics**
- **Synthesis and Characterization of ordered materials**
- **Design and Fabrication of Biosensors**

Honour(s)/Award(s)/ Fellowship(s)

DRDO fellowship

Contributions to AcSIR

- As Faculty AcSIR, I have Supervised Doctoral students for their Ph.D degrees. Till date 8 students have been awarded doctoral degrees under my supervision on the applications of bio-recognition for analytes of clinical importance, food toxins, agricultural adulterants etc.
- Currently mentoring 4 students for their Ph. D thesis in various aspects of biomedical recognition, biomedical applications and biomedical metrology, synthesis and characterization of materials for tailoring the biomedical applications
- Doctoral advisory committee (DAC) for several AcSIR Ph.D. students

Membership of Professional Societies/ Institutions

Life Member : Materials Research Society of India, Indian Women Scientist Association, Vigyan Bharathi