

Dr. Saima Hanif

Assistant Professor

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Profile

Dr. Saima Hanif is an Assistant Professor of Biological Sciences at the National University of Medical Sciences (NUMS), Pakistan. She holds a Bachelor of Pharmacy and an MPhil in Pharmacology. Her doctoral research focused on innovative approaches to fabricate biosensors and to develop electrochemical and chemiluminescence-based analytical methods in the field of virology and immunology. Her interdisciplinary background in pharmacy, pharmacology, molecular pharmacology and bioanalytical chemistry enables her to identify real-world biomedical problems and devise technical solutions. Her ongoing research centers on iron-oxide-based magnetic nanoparticles as biocompatible contrast agents, drug carriers, biosensor components, and theragnostic platforms. She has published more than 17 peer-reviewed articles including book chapter and actively pursues translation of laboratory discoveries into commercial prototypes and patents.

Research Interest

Nano-Biosensor, Point of Care testing and Theragnostic,
Pharmacological investigation of Medicinal Plants and drug discovery.

Selected Publications

Hanif, S., Dong, Z., John, P., Abdussalam, A., Hui, P., Snizhko, D., Halawa, M. I., Xu, G., & Dong, S. (2023). Regenerable sensor based on tris(4,7'-diphenyl-1,10-phenanthroline) ruthenium (II) for anodic and cathodic electrochemiluminescence applications. *Bioelectrochemistry*, 149, 108313.

Hanif, S., John, P., Gao, W., Saqib, M., Qi, L., & Xu, G. (2016). chemiluminescence of creatinine/H₂O₂/Co²⁺ and its application for selective creatinine detection. *Biosensors and Bioelectronics*, 75, 347–351.

Hanif, S., Han, S., John, P., Gao, W., Kitte, S. A., & Xu, G. (2016). Electrochemiluminescence of luminol–tripropylamine system. *Electrochimica Acta*, 196, 245–251.

Khan, S. I., Alanazi, S. J. F., Hanif, S., & Hayat, A. (2025). Synergistic co-assembly of artificial carbon nanozyme and natural peroxidase to design dual active molecularly imprinted interface for endocrine disruptor's detection in industrial effluent. *Microchimica Acta*, 192, 622.

Tessema, S. S., Liu, H., Abdussalam, A., Lijalem, T., Hussain, A., Hanif, S., & Xu, G. (2026). Co₃O₄/CuO hollow nanocages as effective bimetallic nanocatalysts of luminol/H₂O₂ chemiluminescence for dopamine detection. *Microchemical Journal*, 196, 117924.

Hanif, S., Xu, G., & Saleem, M. T. (2024). Recent advances in COVID-19 diagnostics. In M. Rizwan, M. U. Ahmed, & G. Xu (Eds.), *Low-cost diagnostics: Fabrication, materials, and applications* (pp. 213–232). Cambridge: Royal Society of Chemistry.

Awards/Achievements/ Grants

Three Patents (China and Pakistan)

TWAS fellowship Alumni Itly

GIST-AAAS Alumni USA

Gold Medalist

Winner NUST Excellence award

Cash prize Winner in multiple national and internation Entrepreneurship and Business plan competitions.

Innovator and technology entrepreneur, certified by the U.S. Department of State, with professional exposure to Silicon Valley, Stanford University and among other leading global innovation hubs.