

CURRICULUM VITAE

Dr. RAFIQ AHMAD, PH.D.

Work:

Department : Centre for Nanoscience and Nanotechnology
University : Jamia Millia Islamia
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<https://scholar.google.co.kr/citations?user=dpiBaBUAAAAJ&hl=en&oi=ao>



Details of Research Experience:

Assistant Professor (Ramalingaswami Fellow), Jamia Millia Islamia, India

Host Institute : Centre for Nanoscience and Nanotechnology, Jamia Millia Islamia
Duration : July 2019 – Till date

Postdoctoral Fellow, King Abdullah University of Science and Technology, Saudi Arabia

Host Institute : Sensors lab, Advanced Membranes and Porous Materials Center, Computer, Electrical and Mathematical Science and Engineering Division
Duration : March 2018 – January 2019

Contract Professor, Chonbuk National University, South Korea

Host Institute : School of Semiconductor and Chemical Engineering, Nanomaterials Processing Research Center
Duration : March 2017 – February 2018

Postdoctoral Fellow, Chonbuk National University, South Korea

Host Institute : School of Semiconductor and Chemical Engineering with BK21 Center for Future Energy Materials and Devices project
Duration : March 2014 – February 2017
Host : Prof. Yoon-Bong Hahn

PhD

University : Chonbuk National University
Department : Department of BIN Fusion Technology
Period : March 2010 to February 2014. (**Defense date: 04 December 2013**)
Research Supervisor : Prof. Yoon-Bong Hahn
Title of Thesis : **Chemical and Biological Sensors Based on Functionalized Zinc Oxide Nanostructures**

Research Interests:

- ✓ Sensors (Biosensors, Chemical, and Mineral) Fabrications
- ✓ Advanced Nanomaterial Engineering
- ✓ Nanomaterials for Biomedical/Pharmaceuticals Applications
- ✓ Nano- and Bio-Technology

Academic Profile

Exam.	Discipline	Board/university	Year	Division
10 th	Science	Uttar Pradesh Board	1999	1 st
12 th	Science	Uttar Pradesh Board	2002	1 st
B.Sc.	Life Science	Aligarh Muslim University, India	2005	1 st
M.Sc.	Biotechnology	Kalinga Institute of Industrial Technology, India	2009	1 st

***M.Sc. Dissertation:** *Cloning, Expression and Purification of Peptidyl-tRNA Hydrolase from Pseudomonas Aeruginosa*

Honors/Awards

- **2020-21:** Listed among the top 2% scientists of the World by Stanford University.
- **2019: Ramalingaswami Re-entry Fellowship** by the Department of Biotechnology (DBT), Government of India. **Total cost = 113.60 lakhs**
- **2013: Best Poster Award** “Nonenzymatic Glucose Biosensor Based on CuO Nanoparticles Inkjet-Printed on Silver Electrodes” International Workshop on Flexible & Printed Electronics (IWFPE), Jeonju, Korea (November 20-22, 2013).
- **2012: Best Presentation Award** “Zinc Oxide Nanostructures for Sensing Application” BIN Fusion Technology Workshop, Korea (May 17-18, 2012).
- **2009:** Qualified Graduate Aptitude Test in Engineering (GATE)

Membership of Professional Organizations:

S.N.	Name of Academic Society	Membership number	Type	Year/Duration
1.	KICHe	-	Annual	2011-2017
2.	IEEE	95132020	Annual	2018-2019
3.	Royal Society of Chemistry	699553	-	2021-2022

Editing/Reviewing Experience

- **Guest Editor:** Advances in Materials Science and Engineering (HINDAWI PUBLISHING CORPORATION) for 6 months
- **Reviewing Experience:** ACS Nano (**IF= 15.881**), Chemical Engineering Journal (**IF = 12.984**), Biosensors and Bioelectronics (**IF = 10.618**), ACS Applied Materials & Interfaces (**IF = 9.229**), Sensors & Actuators: B: Chemical (**IF = 7.460**), Analytical Chemistry (**IF = 6.986**), Applied Surface Science (**IF = 6.707**), Chemical Communications (**IF = 6.222**), Analytica Chimica Acta (**IF = 6.558**), and many more.

FUNDED PROJECTS

Ongoing:

- > **As PI:** Development of Advanced Nanomaterials for Sensor, Biomedical and Industrial Applications (2019.07 ~ 2024.06), Funded by the Department of Biotechnology, GOI, India, **Total cost = 113.60 lac**
- > **As Co-PI:** Nanomedicine Research Grant, Funded by ICMR, Year of Sanction: 2021; **Total cost = 58.06 lac**

MS & Ph.D. SUPERVISION:

- > Ph.D. Pursuing : 02 Student
- > M.Tech. Project Work (Co-Supervised) : 01 Student
- > M.Tech./M.Sc. Project Work (Supervised) : 05 Students
- > M.Tech./M.Sc. Project Work Pursuing : 02 Students

ACADEMIC TEACHING: (September 2019- Till date)

- **MTN1-04:** Foundations in Micro and Nano Systems
- **MTN2-02:** MEMS/NEMS and Sensors Technology
- **PHDNT1-01:** Research Methodology
- **PHDNT1-10:** Nanomaterials based Biosensors

PUBLICATIONS:

❖ Bibliometry

- **145 Publications:** 88 Journal Papers, 2 conference publications, 6 Book Chapters, 49 conference abstracts
- **Total IF of Journal Publications: ~500**
- **Citations : >3627** (Google Scholar), H-Index: **37**, Average Citation: >42, i-10 index: **70**

Published Articles in Journals (88): ***Corresponding author** [#] **Equal contribution**

2022 (01)

1. Iram Wahid, Pratibha Rani, Sarika Kumari, **Rafiq Ahmad**, Sofi J. Hussian, Saud Alamri, Nirmalya Tripathy, and M. Iqbal R. Khan, "Biosynthesized Gold Nanoparticles Maintains Nitrogen Metabolism, Nitric Oxide Synthesis, Ionic Balance, and Stabilizes The Defense Systems to Improve Salt Stress Tolerance in Wheat" *Chemosphere (ELSEVIER)*, Vol. **287(2)**, pp. 132142, 2022. (IF: **7.086**; Citation: **NA**) **Q1**
<https://doi.org/10.1016/j.chemosphere.2021.132142>

2021 (09)

2. Vandana Nagal, Virendra Kumar, Marya Khan, Suliman Alomar, Nirmalya Tripathy, Kedar Singh, Ajit Khosla, Naushad Ahmad, A.K. Hafiz, and **Rafiq Ahmad*** "A Highly Sensitive Uric Acid Biosensor Based on Vertically Arranged ZnO Nanorods on ZnO Nanoparticles Seeded Electrode" *New Journal of Chemistry (RSC)*, Vol. **45**, pp. 18863-18870, 2021. (IF: **3.591**; Citation: **NA**) **Q1** <https://doi.org/10.1039/D1NJ03744G>

3. Vandana Nagal, Virendra Kumar, Rahul Kumar, Kedar Singh, Ajit Khosla, **Rafiq Ahmad***, and A.K. Hafiz, "CsPbBr₃ Nanoplatelets: Synthesis and Understanding of Ultraviolet Light-Induced Structural Phase Change and Luminescence Degradation" *ECS Journal of Solid State Science and Technology (IOP Publishing)*, Vol. **10**, pp. 096002, 2021. (IF: 2.070; Citation: NA) Q2 <https://doi.org/10.1149/2162-8777/ac2078>
4. Summaiyya Khan, Akrema, Sahar Qazi, **Rafiq Ahmad**, Khalid Raza, and Rahisuddin, "In Silico and Electrochemical Studies for ZnO-CuO Based Immunosensor for Sensitive and Selective Detection of *E. coli*" ACS Omega, Vol. **6(24)**, pp. 16076-16085, 2021. (IF: 3.512; Citation: NA) <https://doi.org/10.1021/acsomega.1c01959>
5. Marya Khan, Vandana Nagal, Umesh Tukaram Nakate, Mohammad Rizwan Khan, Ajit Khosla, and **Rafiq Ahmad***, "Engineered CuO Nanofibers with Boosted Non-Enzymatic Glucose Sensing Performance" *Journal of The Electrochemical Society (IOP Publishing)*, Vol. **168**, pp. 067507, 2021. (IF: 4.316; Citation: 8) Q1 <https://doi.org/10.1149/1945-7111/ac030d>
6. Vandana Nagal, Virendra Kumar, **Rafiq Ahmad***, Marya Khan, Zishan H Khan, Kedar Singh, Hidemitsu Furukawa, Ajit Khosla, Yoon Bong Hahn, and A.K. Hafiz, "Review—Emerging Applications of g-C₃N₄ Films in Perovskite-Based Solar Cells" *ECS Journal of Solid State Science and Technology (IOP Publishing)*, Vol. **10**, pp. 065001, 2021. (IF: 2.070; Citation: NA) Q2 <https://doi.org/10.1149/2162-8777/ac040b>
7. Navjyoti Boora, **Rafiq Ahmad**, Poonam Rani, Pankaj Kumar Maheshwari, Ajit Khosla, Sonia Bansal, V. P. S. Awana and A.K. Hafiz, "Room Temperature Synthesis of Colossal Magneto-Resistance of La_{2/3}Ca_{1/3}MnO₃: Ag_{0.10} Composite" *ECS Journal of Solid State Science and Technology (IOP Publishing)*, Vol. **10**, pp. 027006, 2021. (IF: 2.070; Citation: 1) Q2 <https://doi.org/10.1149/2162-8777/abe58d>
8. Rahul S. Salunke, Yogesh T. Nakate, Ahmad Umar, Umesh Nakate, **Rafiq Ahmad**, Dhammanand J. Shirale, "Anodic Stripping Voltammetry Analysis of One-dimensional Gold Nanoparticles Functionalized Single Polypyrrole Nanowire for Arsenic Sensing" *Surfaces and Interfaces (ELSEVIER)*, Vol. **23**, pp.100895, 2021. (IF: 4.837; Citation: 2) Q1 <https://doi.org/10.1016/j.surfin.2020.100895>
9. **Rafiq Ahmad***, Marya Khan, Prabhash Mishra, Nushrat Jahan, Md. Aquib Ahsan, Imran Ahmad, Mohammad Rizwan Khan, Yosuke Watanabe, Syed Mansoor Ali, Hidemitsu Furukawa, and Ajit Khosla, "Engineered Hierarchical CuO Nanoleaves Based Electrochemical Nonenzymatic Biosensor for Glucose Detection" *Journal of The Electrochemical Society (IOP Publishing)*, Vol. **168**, pp. 017501, 2021. (IF: 4.316; Citation: 28) Q1 <https://doi.org/10.1149/1945-7111/abd515>
10. Kiesar Sideeq Bhat, **Rafiq Ahmad**, Tahmineh Mahmoudi, and Yoon-Bong Hahn, "High Performance Chemical Sensor with Field-Effect Transistors Array for Selective Detection of Multiple Ions" *Chemical Engineering Journal (ELSEVIER)*, Vol. **417**, pp.128064, 2021. (IF: 13.273; Citation: 2) Q1 <https://doi.org/10.1016/j.cej.2020.128064>

2020 (09)

11. Sheng Joue Young, Yi Hsing Liu, Zheng Dong Lin, Kumkum Ahmed, MD Nahin Ialam Shiblee, Sean Romanuik, Praveen Kumar Sekhar, Thomas Thundat, Larry Nagahara, Sandeep Arya, **Rafiq Ahmed**, Hidemitsu Furukawa, Ajit Khosla, "Multi-walled Carbon Nanotubes Decorated with Silver Nanoparticles for Acetone Gas Sensing at Room Temperature" *Journal of The Electrochemical Society (IOP Publishing)*, Vol. **167**, pp. 167519, 2020. (IF: 4.316; Citation: 36) Q1 <https://doi.org/10.1149/1945-7111/abd1be>

12. Marya Khan, Mohammad Rizwan Khan, Amal M. Al-Mohaimed, Tahani saad Algarni, Ajit Khosla, **Rafiq Ahmad***, "Highly Sensitive Hydrazine Detection Using Vertically Oriented ZnO Nanosheets Based Field-Effect Transistor" *Journal of The Electrochemical Society (IOP Publishing)*, Vol. **167**, pp. 167513, 2020. (IF: 4.316; Citation: 15) Q1
<https://doi.org/10.1149/1945-7111/abcd4c>
13. Iram Wahid, Sarika Kumari, **Rafiq Ahmad**, Sofi Hussein, Saud Alamri, Manzer H. Siddiqui, M. Iqbal R. Khan, "Silver Nanoparticle Regulates Salt Tolerance in Wheat Through Changes in ABA Concentration, Ion Homeostasis, and Defense Systems" *Biomolecules (MDPI)*, Vol. **10**, pp.1506, 2020. (IF: 4.879; Citation: 6) Q1
<https://doi.org/10.3390/biom10111506>
14. Prithvi Singh, Archana Sharma, Rishabh Jha, Shweta Arora, **Rafiq Ahmad**, Arshad Husain Rahmani, Saleh A. Almatroodi, Ravins Dohare, Mansoor Ali Syed, "Transcriptomic Analysis Delineates Potential Signature Genes and miRNAs Associated with the Pathogenesis of Asthma" *Scientific Reports (NPG)*, Vol. **10**, pp.13354, 2020. (IF: 4.379; Citation: 3) Q1
<https://doi.org/10.1038/s41598-020-70368-5>
15. **Rafiq Ahmad***, Marya Khan, Nirmalya Tripathy, M. Iqbal R. Khan, Ajit Khosla, "Hydrothermally Synthesized Nickel Oxide Nanosheets for Non-Enzymatic Electrochemical Glucose Detection" *Journal of The Electrochemical Society (IOP Publishing)*, Vol. **167**, pp. 107504, 2020. (IF: 4.316; Citation: 26) Q1 <https://doi.org/10.1149/1945-7111/ab9757>
16. Sunil Kumar, Vladimir Pavelyev, Nishant Tripathi, Vladimir Platonov, Prachi Sharma, **Rafiq Ahmad**, Prabhash Mishra, Ajit Khosla, "Review—Recent Advances in the Development of Carbon Nanotubes Based Flexible Sensors" *Journal of The Electrochemical Society (IOP Publishing)*, Vol. **167**, pp. 047506, 2020. **Review Article** (IF: 4.316; Citation: 13) Q1
<https://doi.org/10.1149/1945-7111/ab7331>
17. **Rafiq Ahmad***, Marya Khan, Mohammad Rizwan Khan, Nirmalya Tripathy, M. Iqbal R. Khan, Prabhash Mishra, Mansoor Ali Syed, Ajit Khosla "Nano-donuts Shaped Nickel Oxide Nanostructures for Sensitive Non-enzymatic Electrochemical Detection of Glucose" *Microsystem Technologies (Springer)*, pp. 1-6, 2020. (IF: 2.276; Citation: 11) Q2
<https://doi.org/10.1007/s00542-020-04754-4>
18. Umesh T. Nakate, **Rafiq Ahmad**, Pramila Patil, Y.T. Yu, Yoon-Bong Hahn, "Ultra-thin NiO Nanosheets for High Performance Hydrogen Gas Sensor Device" *Applied Surface Science (ELSEVIER)*, Vol. **506**, pp. 144971, 2020. (IF: 6.707; Citation: 59) Q1
<https://doi.org/10.1016/j.apsusc.2019.144971>
19. **Rafiq Ahmad***, Nirmalya Tripathy, Ajit Khosla, Marya Khan, Prabhash Mishra, Waquar Akhter Ansari, Syed Mansoor Ali, and Yoon-Bong Hahn, "Review—Recent Advances in Nanostructured Graphitic Carbon Nitride as a Sensing Material for Heavy Metal Ions" *Journal of The Electrochemical Society (IOP Publishing)*, Vol. **167**, pp. 037519, 2020. **Review Article** (IF: 4.316; Citation: 20) Q1 <https://doi.org/10.1149/2.0192003JES>

2019 (07)

20. Marya Khan, **Rafiq Ahmad***, Nirmalya Tripathy, Ajit Khosla, M. Iqbal R. Khan, Prabhash Mishra, Mansoor Ali Syed, Waquar Akhter Ansari, "Fabrication of an Ultra-sensitive Hydrazine Sensor Based on Nano-chips Shaped Nickel Hydroxide Modified Electrodes" *Microsystem Technologies (Springer)*, pp. 1-8, 2019. (IF: 2.276; Citation: 4) Q2
<https://doi.org/10.1007/s00542-019-04721-8>
21. **Rafiq Ahmad***, Sanjit Manohar Majhi, Xixiang Zhang, Timothy M. Swager, Khaled N.

- Salama, "Recent Progress and Perspectives of Gas Sensors Based on Vertically Oriented ZnO Nanomaterials" *Advances in Colloid and Interface Science (ELSEVIER)*, Vol. **270**, pp. 1-27, 2019. **Review Article** (IF: 12.984; Citation: 72) Q1 <https://doi.org/10.1016/j.cis.2019.05.006>
22. Umesh T. Nakate, **Rafiq Ahmad**, Pramila Patil, Yousheng Wang, Kiesar Sideeq Bhat, Tahmineh Mahmoudi, Y.T. Yu, Eun-kyung Suh, and Yoon-Bong Hahn, "Improved Selectivity and Low Concentration Hydrogen Gas Sensor Application of Pd Sensitized Heterojunction n-ZnO/p-NiO Nanostructures" *Journal of Alloys and Compounds (ELSEVIER)*, Vol. **797**, pp. 456-464, 2019. (IF: 5.316; Citation: 61) Q1 <https://doi.org/10.1016/j.jallcom.2019.05.111>
 23. Umesh T. Nakate, **Rafiq Ahmad**, Pramila Patil, Kiesar Sideeq Bhat, Yousheng Wang, Tahmineh Mahmoudi, Y.T. Yu, Eun-kyung Suh, Yoon-Bong Hahn, "High Response and Low Concentration Hydrogen Gas Sensing Properties Using Hollow ZnO Particles Transformed from Polystyrene@ZnO Core-shell Structures" *International Journal of Hydrogen Energy (ELSEVIER)*, Vol. **44**, pp.15677-15688, 2019. (IF: 5.817; Citation: 20) Q1 <https://doi.org/10.1016/j.ijhydene.2019.04.058>
 24. **Rafiq Ahmad***, Tutku Bedük, Sanjit Manohar Majhi and Khaled Nabil Salama, One-step Synthesis and Gold Nanoparticle Decoration of Nickel Oxide Nanosheets for Hydrazine Sensing Application, *Sensors and Actuators B: Chemical (ELSEVIER)*, Vol. **286**, pp. 139-147, 2019. (IF: 7.460; Citation: 23) Q1 <https://doi.org/10.1016/j.snb.2019.01.132>
 25. Mohamed A. Yassin, Bishnu Kumar Shrestha, **Rafiq Ahmad**, Sita Shrestha, Chan Hee Park, and Cheol Sang Kim, "Exfoliated Nanosheets of Co₃O₄ Webbed with Polyaniline Nanofibers: Novel Composite Electrode Material for Enzymeless Glucose Sensing Application" *Industrial and Engineering Chemistry (ELSEVIER)*, Vol. **73**, pp. 106-117, 2019. (IF: 6.064; Citation: 19) Q1 <https://doi.org/10.1016/j.jiec.2019.01.011>
 26. Sandeep G. Suryaa, Harshil N. Raval, **Rafiq Ahmad**, Prashant Sonar, Khaled N. Salama, V. Ramgopal Rao "Organic Field Effect Transistors (OFETs) in Environmental Sensing and Health Monitoring: A Review" *Trends in Analytical Chemistry (ELSEVIER)*, Vol. **111**, pp. 27-36, 2019. **Review Article** (IF: 12.296; Citation: 49) Q1 <https://doi.org/10.1016/j.trac.2018.11.027>

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27. **Rafiq Ahmad**, Otto S. Wolfbeis, Yoon-Bong Hahn, Husam N. Alshareef, Luisa Torsi, and Khaled N. Salama, "Deposition of Nanomaterials: A Crucial Step in Biosensor Fabrication" *Materials Today Communications (ELSEVIER)*, Vol. **17**, pp. 289-321, 2018. **Review Article** (IF: 3.383; Citation: 72) Q2 *Most Downloaded and Most Cited Article* <https://doi.org/10.1016/j.mtcomm.2018.09.024>
28. Umesh T. Nakate, Gun Hee Lee, **Rafiq Ahmad**, Pramila Patil, Yoon-Bong Hahn, T.T. Yu, and Eun-Kyung Suh, "Nano-bitter Gourd Like Structured CuO for High Response and Low Concentration Hydrogen Gas Sensor" *International Journal of Hydrogen Energy (ELSEVIER)*, Vol. **43**, pp. 22705-22714, 2018. (IF: 5.816; Citation: 46) Q1 <https://doi.org/10.1016/j.ijhydene.2018.09.162>
29. Umesh T. Nakate, Gun Hee Lee, **Rafiq Ahmad**, Pramila Patil, Dhanaji P. Bhopate, Yoon-Bong Hahn, T.T. Yu, and Eun-Kyung Suh, "Hydrothermal synthesis of p-type nanocrystalline NiO Nanoplates for High Response and Low Concentration Hydrogen Gas Sensor Application" *Ceramics International (ELSEVIER)*, Vol. **44**, pp. 15721-15729, 2018. (IF: 4.527; Citation: 28) Q1 <https://doi.org/10.1016/j.ceramint.2018.05.246>

30. Dharmendra Kumar Soni, **Rafiq Ahmad**, and Suresh Kumar Dubey, "Biosensor for the Detection of *Listeria monocytogenes*: Emerging Trends" *Critical Reviews in Microbiology (Taylor & Francis)*, Vol. **44**, pp. 590-608, 2018. **Review Article (IF: 7.624; Citation: 24) Q1** <https://doi.org/10.1080/1040841X.2018.1473331>
31. **Rafiq Ahmad***, Nirmalya Tripathy, Min-Sang Ahn, Jin-Young Yoo, and Yoon-Bong Hahn, "Preparation of a Highly Conductive Seed Layer for Calcium Sensor Fabrication with Enhanced Sensing Performance" *ACS Sensors (ACS)*, Vol. **3**, pp. 772-778, 2018. **(IF: 7.711; Citation: 25) Q1** <https://doi.org/10.1021/acssensors.7b00900>
32. Min-Sang Ahn[#], **Rafiq Ahmad***[#], Kiesar Sideeq Bhat, Jin-Young Yoo, Tahmineh Mahmoudi, and Yoon-Bong Hahn, "Fabrication of a Solution-Gated Transistor Based on Valinomycin Modified Iron Oxide Nanoparticles Decorated Zinc Oxide Nanorods for Potassium Detection" *Journal of Colloid and Interface Science (ELSEVIER)*, Vol. **518**, pp. 277-283, 2018. **(IF: 8.128; Citation: 26) Q1** <https://doi.org/10.1016/j.jcis.2018.02.041>
33. Min-Sang Ahn[#], **Rafiq Ahmad***[#], Jin-Young Yoo, and Yoon-Bong Hahn, "Synthesis of Manganese Oxide Nanorods and Its Application for Potassium Ion Sensing in Water" *Journal of Colloid and Interface Science (ELSEVIER)*, Vol. **516**, pp. 364-370, 2018. **(IF: 8.128; Citation: 21) Q1** <https://doi.org/10.1016/j.jcis.2018.01.081>
34. **Rafiq Ahmad***, Tahmineh Mahmoudi, Min-Sang Ahn, Jin-Young Yoo, and Yoon-Bong Hahn, "Fabrication of Sensitive Non-enzymatic Nitrite Sensor Using Silver-reduced Graphene Oxide Nanocomposite" *Journal of Colloid and Interface Science (ELSEVIER)*, Vol. **516**, pp. 67-75, 2018. **(IF: 8.128; Citation: 34) Q1** <https://doi.org/10.1016/j.jcis.2018.01.052>
35. Kiesar Sideeq Bhat, **Rafiq Ahmad***, Jin-Young Yoo, and Yoon-Bong Hahn, "Fully Nozzle-Jet Printed Non-enzymatic Electrode for Biosensing Application" *Journal of Colloid and Interface Science (ELSEVIER)*, Vol. **512**, pp. 480-488, 2018. **(IF: 8.128; Citation: 27) Q1** <https://doi.org/10.1016/j.jcis.2017.10.088>
36. Da-Un-Jin Jung[#], **Rafiq Ahmad***[#], and Yoon-Bong Hahn, "Nonenzymatic Flexible Field-Effect Transistor Based Glucose Sensor Fabricated Using NiO Quantum Dots Modified ZnO Nanorods" *Journal of Colloid and Interface Science (ELSEVIER)*, Vol. **512**, pp. 21-18, 2018. **(IF: 8.128; Citation: 61) Q1** <https://doi.org/10.1016/j.jcis.2017.10.037>
37. **Rafiq Ahmad***, Tahmineh Mahmoudi, Min-Sang Ahn, and Yoon-Bong Hahn, "Recent Advances in Nanowires-Based Field-Effect Transistors for Biological Sensor Applications" *Biosensors and Bioelectronics (ELSEVIER)*, Vol. **100**, pp. 312-325, 2018. **Review Article (IF: 10.618; Citation: 82) Q1** <https://doi.org/10.1016/j.bios.2017.09.024>

2017 (14)

38. B.K. Shrestha, **Rafiq Ahmad**, Sita Shrestha, C.H. Park, and C.S. Kim, "Globular Shaped Polypyrrole Doped Well-Dispersed Functionalized Multiwall Carbon Nanotubes/Nafion Composite for Enzymatic Glucose Biosensor Application" *Scientific Reports (NPG)*, Vol. **7**, pp.16191, 2017. **(IF: 4.379; Citation: 27) Q1** <https://doi.org/10.1038/s41598-017-16541-9>
39. **Rafiq Ahmad**, Min-Sang Ahn, and Yoon-Bong Hahn, "A Highly Sensitive Nonenzymatic Sensor Based on Fe₂O₃ Nanoparticles Coated ZnO Nanorods for Electrochemical Detection of Nitrite" *Advanced Materials Interfaces (Wiley)*, pp. 1700691, 2017. **(IF: 6.147; Citation: 39) Q1** <https://doi.org/10.1002/admi.201700691>
40. Yousheng Wang, Tahmineh Mahmoudi, Won-Yeop Rho, Hwa-Young Yang, Seunghui Seo,

- Kiesar Sideeq Bhat, **Rafiq Ahmad**, and Yoon-Bong Hahn, "Ambient-Air-Solution-Processed Efficient and Highly Stable Perovskite Solar Cells Based on $\text{CH}_3\text{NH}_3\text{PbI}_3\text{-xClx-NiO}$ Composite with $\text{Al}_2\text{O}_3/\text{NiO}$ Interfacial Engineering" *Nano Energy (ELSEVIER)*, Vol. **40**, pp.408-417, 2017. (IF: 17.881; Citation: 42) Q1 <http://dx.doi.org/10.1016/j.nanoen.2017.08.047>
41. **Rafiq Ahmad**, Kiesar Sideeq Bhat, Min-Sang Ahn, and Yoon-Bong Hahn, "Fabrication of a Robust and Highly Sensitive Nitrate Biosensor Based on Directly Grown Zinc Oxide Nanorods on Silver Electrode" *New Journal of Chemistry (RSC)*, Vol. **41**, pp. 10992-10997, 2017. (IF: 3.591; Citation: 12) Q1 <https://doi.org/10.1039/C7NJ02526B>
 42. Kiesar Sideeq Bhat, **Rafiq Ahmad**, Jin-Young Yoo and Yoon-Bong Hahn, "Nozzle-Jet Printed Flexible Field-Effect Transistor Biosensor for High Performance Glucose Detection" *Journal of Colloid and Interface Science (ELSEVIER)*, Vol. **506**, pp. 188-196, 2017. (IF: 8.128; Citation: 31) Q1 <https://doi.org/10.1016/j.jcis.2017.07.037>
 43. **Rafiq Ahmad**, Nirmalya Tripathy, Min-Sang Ahn, Kiesar Sideeq Bhat, Tahmineh Mahmoudi, Yousheng Wang, Jin-Young Yoo, Dae-Wook Kwon, Hwa-Young Yang and Yoon-Bong Hahn, "Highly Efficient Non-Enzymatic Glucose Sensor Based on CuO Modified Vertically-Grown ZnO Nanorods on Electrode" *Scientific Reports (NPG)*, Vol. **7**, pp.5715, 2017. (IF: 4.379; Citation: 165) Q1 <https://doi.org/10.1038/s41598-017-06064-8>
45th in Top 100 Materials Science Articles, 2017
 44. Ahmed A. Ibrahim[#], **Rafiq Ahmad**[#], Ahmad Umar[#], M.S. Al-Assiri, A.E. Al-Salami, Rajesh Kumar, S.G. Ansari and S. Baskoutas, "Two-dimensional Ytterbium Oxide Nanodisks Based Biosensor for Selective Detection of Urea" *Biosensors and Bioelectronics (ELSEVIER)*, Vol. **98**, pp. 254-260, 2017. (IF: 10.618; Citation: 41) Q1 <https://doi.org/10.1016/j.bios.2017.06.015>
 45. **Rafiq Ahmad**, Nirmalya Tripathy, Min-Sang Ahn, and Yoon-Bong Hahn, "Solution Process Synthesis of High Aspect Ratio ZnO Nanorods on Electrode Surface for Sensitive Electrochemical Detection of Uric Acid" *Scientific Reports (NPG)*, Vol. **7**, pp.46475, 2017. (IF: 4.379; Citation: 51) Q1 <https://doi.org/10.1038/srep46475>
 46. Bishnu Kumar Shrestha, **Rafiq Ahmad**, Sita Shrestha, Chan Hee Park, and Cheol Sang Kim "In Situ Synthesis of Cylindrical Spongy Polypyrrole Doped Protonated Graphitic Carbon Nitride for Cholesterol Sensing Application" *Biosensors and Bioelectronics (ELSEVIER)*, Vol. **94**, pp. 686-693, 2017. (IF: 10.618; Citation: 61) Q1 <https://doi.org/10.1016/j.bios.2017.03.072>
 47. **Rafiq Ahmad**, Min-Sang Ahn, and Yoon-Bong Hahn, "ZnO Nanorods Array Based Field-effect Transistor Biosensor for Phosphate Detection" *Journal of Colloid and Interface Science (ELSEVIER)*, Vol. **498**, pp. 292-297, 2017. (IF: 8.128; Citation: 71) Q1 <https://doi.org/10.1016/j.jcis.2017.03.069>
 48. **Rafiq Ahmad**, Min-Sang Ahn, and Yoon-Bong Hahn, "Fabrication of a Non-enzymatic Glucose Sensor Field-Effect Transistor Based on Vertically-Oriented ZnO Nanorods Modified with Fe_2O_3 " *Electrochemistry Communications (ELSEVIER)*, Vol. **77**, pp.107-111, 2017. (IF: 4.728; Citation: 70) Q1 <https://doi.org/10.1016/j.elecom.2017.03.006>
 49. Nirmalya Tripathy, **Rafiq Ahmad**, Jeong Eun Song, Hyun Park, and Gilson Khang, "ZnO Nanonails for Photocatalytic Degradation of Crystal Violet Dye Under UV Irradiation" *AIMS Materials Science* Vol. **4**, pp. 267-276, 2017. (IF: 0.320; Citation: 14) <https://doi.org/10.3934/matricsci.2017.1.267>
 50. **Rafiq Ahmad***, Nirmalya Tripathy, Min-Sang Ahn, and Yoon-Bong Hahn, "Development of

- Highly-stable Binder-free Chemical Sensor Electrodes for p-nitroaniline Detection" *Journal of Colloid and Interface Science (ELSEVIER)*, Vol. **494**, pp. 300-306, 2017. (IF: **8.128**; Citation: **21**) Q1 <https://doi.org/10.1016/j.jcis.2017.01.099>
51. Rafiq Ahmad*, Nirmalya Tripathy, Min-Sang Ahn, and Yoon-Bong Hahn, "Highly Stable Hydrazine Chemical Sensor Based on Vertically-aligned ZnO Nanorods Grown on Electrode" *Journal of Colloid and Interface Science (ELSEVIER)*, Vol. **494**, pp. 153-158, 2017. (IF: **8.128**; Citation: **46**) Q1 <https://doi.org/10.1016/j.jcis.2017.01.094>

2016 (11)

52. Muhammad Yasir Khan, Rafiq Ahmad, Gun Hee Lee, Eun-Kyung Suh, and Yoon-Bong Hahn, "Effect of Annealing Atmosphere on the Optical and Electrical Properties of Al-doped ZnO Films and ZnO Nanorods Grown by Solution Process" *Science of Advanced Materials (American Scientific Publishers)* Vol. **8**, pp. 1523-1529, 2016. (IF: **1.474**; Citation: **6**) Q3 <https://doi.org/10.1166/sam.2016.2767>
53. Rafiq Ahmad and Yoon-Bong Hahn, "FET Biosensors Based on Carbon Nanotubes and Graphene" *Science Advances Today (LOGNOR)*, Vol. **2**, pp. 25241, 2016. **Review Article** (IF: **NA**; Citation: **6**)
54. Ahmed A. Ibrahim, Ahmad Umar, Rafiq Ahmad, Rajesh Kumar, and S. Baskoutas, "Fabrication and Characterization of Highly Sensitive and Selective Glucose Biosensor Based on ZnO Decorated Carbon Nanotubes" *Nanoscience and Nanotechnology Letters (American Scientific Publishers)* Vol. **8**, pp. 853-858, 2016. (IF: **1.128**; Citation: **12**) Q4 <https://doi.org/10.1166/nnl.2016.2259>
55. Kiesar Sideeq Bhat[#], Rafiq Ahmad[#], Yousheng Wang, and Yoon-Bong Hahn, "Low-Temperature Sintering Highly Conductive Silver Ink for Flexible Electronics" *Journal of Materials Chemistry C (RSC)*, Vol. **4**, pp. 8522-8527, 2016. (IF: **7.393**; Citation: **36**) Q1 <https://doi.org/10.1039/C6TC02751B>
56. Bishnu kumar Shrestha, Rafiq Ahmad, Hamouda M. Mousa, In-Gi Kim, Jeong In Kim, Madhav Prasad Naupane, Chan Hee Park, and Cheol Sang Kim, "High-Performance Glucose Biosensor Based on Chitosan-Glucose Oxidase Immobilized Polypyrrole/Nafion/Functionalized Multi-walled Carbon Nanotubes Bio-nanohybrid Film" *Journal of Colloid and Interface Science (ELSEVIER)*, Vol. **482**, pp. 39-47, 2016. (IF: **8.128**; Citation: **96**) Q1 <https://doi.org/10.1016/j.jcis.2016.07.067>
57. Nirmalya Tripathy[#], Rafiq Ahmad[#], Hyeon Kuk, Dae Hoon Lee, Yoon-Bong Hahn, and Gilson Khang, "Rapid Methyl Orange Degradation Using Porous ZnO Spheres Photocatalyst" *Journal of Photochemistry and Photobiology B: Biology (ELSEVIER)*, Vol. **161**, pp. 312-317, 2016. (IF: **6.252**; Citation: **49**) Q1 <https://doi.org/10.1016/j.jphotobiol.2016.06.003>
58. Nirmalya Tripathy, Rafiq Ahmad, Seung Hyuck Bang, Gilson Khang, Jiho Min, and Yoon-Bong Hahn, "Outstanding Antibiofilm Features of Quanta-CuO Film on Glass Surface" *ACS Applied Material & Interfaces (ACS)*, Vol. **8** (24), pp. 15128-15137, 2016. (IF: **9.229**; Citation: **33**) Q1 <https://doi.org/10.1021/acsami.6b04494>
59. Rafiq Ahmad*, Nirmalya Tripathy, Muhammad Yasir Khan, Kiesar Sideeq Bhat, Min-Sang Ahn, Gilson Khang, and Yoon-Bong Hahn, "Hierarchically Assembled ZnO Nanosheets Microspheres for Enhanced Glucose Sensing Performances" *Ceramics International (ELSEVIER)*, Vol. **42**, pp. 13464-13469, 2016. (IF: **4.527**; Citation: **14**) Q1 <https://doi.org/10.1016/j.ceramint.2016.05.134>

60. **Rafiq Ahmad***, Nirmalya Tripathy, Muhammad Yasir Khan, Kiesar Sideeq Bhat, Min-Sang Ahn, and Yoon-Bong Hahn, "Ammonium Ion Detection in Solution Using Vertically Grown ZnO Nanorods Based Field-effect Transistor" *RSC Advances (RSC)*, Vol. **6**, pp. 54836-54840, 2016. (IF: 3.361; Citation: 34) Q1 <https://doi.org/10.1039/C6RA09731F>
61. Ahmad Umar, **Rafiq Ahmad**, Rajesh Kumar, Ahmed A. Ibrahim, and S. Baskoutas, "Bi₂O₂CO₃ Nanoplates: Fabrication and Characterization of Highly Sensitive and Selective Cholesterol Biosensor" *Journal of Alloys and Compounds (ELSEVIER)*, Vol. **683**, pp. 433-438, 2016. (IF: 5.316; Citation: 29) Q1 <https://doi.org/10.1016/j.jallcom.2016.05.063>
62. Nirmalya Tripathy[#], **Rafiq Ahmad[#]**, Hyeon Kuk, Yoon-Bong Hahn, and Gilson Khang, "Mesoporous ZnO Nanoclusters as an Ultra-active Photocatalyst" *Ceramics International (ELSEVIER)*, Vol. **42**, pp. 9519-9526, 2016. (IF: 4.527; Citation: 43) Q1 <https://doi.org/10.1016/j.ceramint.2016.03.030>

2015 (09)

63. Ahmad Umar, Ali Al-Hajry, **Rafiq Ahmad**, S.G. Ansari, Mohammed Sultan Al-Assiri, and Hamed Algarni, "Fabrication and Characterization of Highly Sensitive Hydroquinone Chemical Sensor based on Iron-doped ZnO Nanorods" *Dalton Transactions (RSC)* Vol. **44**, pp. 21081-21087, 2015. (IF: 4.390; Citation: 32) Q1 <https://doi.org/10.1039/C5DT03364K>
64. Muhammad Yasir Khan, Mohammad Vaseem, **Rafiq Ahmad**, Ahmad Umar, Sang-Hoon Kim, A. Al-Hajry and Yoon-Bong Hahn, "Optical and Electrical Properties of Li-Doped CuO Quantum-Dots Films by Solution Process" *Science of Advanced Materials (American Scientific Publishers)* Vol. **7**, pp. 2481-2485, 2015. (IF: 1.474; Citation: NA) Q3 <https://doi.org/10.1166/sam.2015.2649>
65. **Rafiq Ahmad**, Nirmalya Tripathy, Jin-Ho Park, and Yoon-Bong Hahn, "A comprehensive Biosensor Integrated with a ZnO Nanorod FET Array for Selective Detection of Glucose, Cholesterol and Urea" *Chemical Communications (RSC)*, Vol. **51**, pp. 11968-11971, 2015. (IF: 6.222; Citation: 83) Q1 <https://doi.org/10.1039/C5CC03656A>
66. **Rafiq Ahmad**, Nirmalya Tripathy, Yoon-Bong Hahn, Ahmad Umar, Ahmed Ibrahim and SH Kim, "A Robust Enzymeless Glucose Sensor Based on CuO Nanoseeds Modified Electrode" *Dalton Transactions (RSC)*, Vol. **41**, pp. 12488-12492, 2015. (IF: 4.390; Citation: 41) Q1 <https://doi.org/10.1039/C5DT01664A>
67. Nirmalya Tripathy, **Rafiq Ahmad**, Hyun Ah Ko, Gilson Khang, and Yoon-Bong Hahn, "Enhanced Anticancer Potency by Acid-responsive ZnO Incorporated Liposomal Drug Delivery" *Nanoscale (RSC)*, Vol. **7**, pp. 4088-4096, 2015. (IF: 7.790; Citation: 49) Q1 <https://doi.org/10.1039/C4NR06979J>
68. Nirmalya Tripathy, **Rafiq Ahmad**, Hyun Ah Ko, Gilson Khang, and Yoon-Bong Hahn, "Multi-synergetic ZnO Platform for High Performance Cancer Therapy" *Chemical Communications (RSC)*, Vol. **51**, pp. 2585-2588, 2015. (IF: 6.222; Citation: 15) Q1 <https://doi.org/10.1039/C4CC10037A>
69. Yong Kyu Park, **Rafiq Ahmad**, Won-Yeop Rho, and Yoon-Bong Hahn, "Current Transport Mechanism and Interface Characteristics of Ti/ZnO Nanowire Nano-Schottky Diodes" *ScienceJet (COGNIZURE)*, Vol. **4**, pp. 117-121, 2015. (IF: NA; Citation: NA) <http://www.cognizure.com/scilett.aspx?p=200638588>
70. Hwa-Young Yang[#], **Rafiq Ahmad[#]**, Mohammad Vaseem, Won-Yeop Rho, Nirmalya Tripathy, Dae-Geun Choi, and Yoon-Bong Hahn, "Nanoimprinted ZnO and ZnO Quantum Dots Embedded SiO₂ Layers for Inverted Bulk Heterojunction Solar Cells" *Science of*

Advanced Materials (American Scientific Publishers), Vol. 7, pp. 1253-1257, 2015. (IF: 1.474; Citation: NA) Q3 <https://doi.org/10.1166/sam.2015.2034>

71. Rafiq Ahmad[#], Nirmalya Tripathy[#], Na Keum Jang, Gilson Khang, and Yoon-Bong Hahn, "Fabrication of Highly Sensitive Uric Acid Biosensor Based on Directly Grown ZnO Nanosheets on Electrode Surface" *Sensors and Actuators B: Chemical (ELSEVIER)*, Vol. 206, pp. 146-151, 2015. (IF: 7.460; Citation: 102) Q1 <https://doi.org/10.1016/j.snb.2014.09.026>

2014 (10)

72. Ahmad Umar[#], Rafiq Ahmad[#], Ali Al-Hajry, Sang Hoon Kim, Mohamed Eisa Abaker, and Yoon- Bong Hahn, "Spruce Branched α -Fe₂O₃ Nanostructures as Potential Scaffold for Highly-sensitive and Selective Glucose Biosensor" *New Journal of Chemistry (RSC)*, Vol. 38, pp. 5873-5879, 2014. (IF: 3.591; Citation: 23) Q1 <https://doi.org/10.1039/C4NJ01148A>
73. Nirmalya Tripathy[#], Rafiq Ahmad[#], Jeong Eun Song, Gilson Khang, and Yoon-Bong Hahn, "Cholesterol Biosensing Based on Highly Immobilized ChOx on ZnO Hollow Nanospheres" *RSC Advances (RSC)*, Vol. 4, pp. 46049-46053, 2014. (IF: 3.361; Citation: 10) Q1 <https://doi.org/10.1039/C4RA06583B>
74. Nirmalya Tripathy[#], Rafiq Ahmad[#], Jeong Eun Song, Hyun Ah Ko, Yoon-Bong Hahn, and Gilson Khang "Photocatalytic Degradation of Methyl Orange Dye by ZnO Nanoneedle Under UV Irradiation" *Materials Letters (ELSEVIER)*, Vol. 136, pp. 171-174, 2014. (IF: 3.423; Citation: 97) Q1 <https://doi.org/10.1016/j.matlet.2014.08.064>
75. Rizwan Khan[#], Rafiq Ahmad[#], Prabhakar Rai, Lee-Woon Jang, Jin-Hyeon Yun, Yeon-Tae Yu, Yoon-Bong Hahn and In-Hwan Lee, "Glucose-assisted Synthesis of Cu₂O Shuriken-like Nanostructures and Their Application as Nonenzymatic Glucose Biosensors" *Sensors and Actuators B: Chemical (ELSEVIER)*, Vol. 203, pp. 471-476, 2014. (IF: 7.460; Citation: 89) Q1 <https://doi.org/10.1016/j.snb.2014.06.128>
76. Nirmalya Tripathy, Rafiq Ahmad, Seung Hyuck Bang, Jiho Min, and Yoon-Bong Hahn, "Tailored Lysozyme-ZnO Nanoparticle Conjugates as Nanoantibiotic" *Chemical Communications (RSC)*, Vol. 50(66), pp. 9298-9301, 2014. (IF: 6.222; Citation: 46) Q1 <https://doi.org/10.1039/C4CC03712J>
77. Ahmad Umar, Rafiq Ahmad, S. W. Hwang, S. H. Kim, A. Al-Hajry and Y. B. Hahn, "Development of Highly Sensitive and Selective Cholesterol Biosensor Based on Cholesterol Oxidase Co-Immobilized with α -Fe₂O₃ Micro-Pine Shaped Hierarchical Structures" *Electrochimica Acta (ELSEVIER)*, Vol. 135, pp. 396-403, 2014. (IF: 6.901; Citation: 48) Q1 <https://doi.org/10.1016/j.electacta.2014.04.173>
78. Rafiq Ahmad, Nirmalya Tripathy, and Yoon-Bong Hahn, "Highly Stable Urea Sensor Based on ZnO Nanorods Directly Grown on Ag/Glass Electrodes", *Sensors and Actuators B: Chemical (ELSEVIER)*, Vol. 194, pp. 290-295, 2014. (IF: 7.460; Citation: 76) Q1 <https://doi.org/10.1016/j.snb.2013.12.098>
79. Rafiq Ahmad, Nirmalya Tripathy, Sang Hoon Kim, Ahmad Umar, A. Al-Hajry, and Yoon-Bong Hahn, "High Performance Cholesterol Sensor Based on ZnO Nanotubes Grown on Si/Ag Electrodes", *Electrochemistry Communications (ELSEVIER)*, Vol. 38, pp. 4-7, 2014. (IF: 4.724; Citation: 77) Q1 <https://doi.org/10.1016/j.elecom.2013.10.028>
80. Rafiq Ahmad, Nirmalya Tripathy, and Yoon-Bong Hahn, "ZnO Nanoneedles on Silver Electrode for Highly Efficient Glucose Biosensor", *Journal of Nanoscience Letters (COGNIZURE)*, Vol. 4, pp. 18-23, 2014. (IF: NA; Citation: 3)

<http://www.cognizure.com/abstract.aspx?p=109637307>

81. **Rafiq Ahmad**, Nirmalya Tripathy, Da-Un-Jin Jung, and Yoon-Bong Hahn, "Highly Sensitive Hydrazine Chemical Sensor Based on ZnO Nanorods Field-Effect Transistor", *Chemical Communications (RSC)*, Vol. **50**, pp. 1890-1893, 2014. (IF: 6.222; Citation: 105) Q1 <https://doi.org/10.1039/C3CC48197B>

2013 (03)

82. **Rafiq Ahmad**, Mohammad Vaseem, Nirmalya Tripathy, and Yoon-Bong Hahn, "Wide Linear-Range Detecting Non-Enzymatic Glucose Biosensor Based on CuO Nanoparticles Inkjet-Printed on Electrodes", *Analytical Chemistry (ACS)*, Vol. **85**(21), pp. 10448-10454, 2013. (IF: 6.986; Citation: 159) Q1 <https://doi.org/10.1021/ac402925r>
83. Prabhakar Rai, Rizwan Khan[#], **Rafiq Ahmad**[#], Yoon-Bong Hahn, In-Hwan Lee, and Yeon-Tae Yu. "Gas Sensing Properties of Single Crystalline ZnO Nanowires Grown by Thermal Evaporation Technique" *Current Applied Physics (ELSEVIER)*, Vol. **13**(8), pp. 1769-1773, 2013. (IF: 2.480; Citation: 35) Q2 <https://doi.org/10.1016/j.cap.2013.06.005>
84. **Rafiq Ahmad**, Nirmalya Tripathy, and Yoon-Bong Hahn, "High-Performance Cholesterol Sensor Based on the Solution-Gated Field Effect Transistor Fabricated with ZnO Nanorods", *Biosensors and Bioelectronics (ELSEVIER)*, Vol. **45**, pp. 281-286, 2013. (IF: 10.618; Citation: 114) Q1 <https://doi.org/10.1016/j.bios.2013.01.021>

2012 (04)

85. Yoon-Bong Hahn, **Rafiq Ahmad**, and Nirmalya Tripathy, "Chemical and Biological Sensors Based on Metal Oxide Nanostructures", *Chemical Communications (RSC)*, Vol. **48**, pp. 10369-10385, 2012. **Review Article** (IF: 6.222; Citation: 219) Q1 <https://doi.org/10.1039/C2CC34706G>
86. **Rafiq Ahmad**, Nirmalya Tripathy, and Yoon-Bong Hahn, "Wide Linear-Range Detecting High Sensitivity Cholesterol Biosensors Based on Aspect-Ratio Controlled ZnO Nanorods Grown on Silver Electrodes", *Sensors and Actuators B: Chemical (ELSEVIER)*, Vol. **169**, pp. 382-386, 2012. (IF: 7.460; Citation: 62) Q1 <https://doi.org/10.1016/j.snb.2012.05.027>
87. **Rafiq Ahmad**, Nirmalya Tripathy, Jin-Hwan Kim, and Yoon-Bong Hahn, "Highly Selective Wide Linear-Range Detecting Glucose Biosensors Based on Aspect-Ratio Controlled ZnO Nanorods Directly Grown on Electrodes", *Sensors and Actuators B: Chemical (ELSEVIER)*, Vol. **174**, pp. 195-201, 2012. (IF: 7.460; Citation: 85) Q1 <https://doi.org/10.1016/j.snb.2012.08.011>
88. Nirmalya Tripathy, **Rafiq Ahmad**, Han-Sol Jeong, and Yoon-Bong Hahn, "Time Dependent Control of Hole-Opening Degree of Porous ZnO Hollow Microspheres", *Inorganic Chemistry (ACS)*, Vol. **51**(2), pp. 1104-1110, 2012. (IF: 5.164; Citation: 55) Q1 <https://doi.org/10.1021/ic2022598>

Published in Conferences (02)

1. **Rafiq Ahmad**, and K. N. Salama, "Physical Sensors for Biomedical Applications" *IEEE SENSORS 2018*, pp. 83-85, 2018. (Citation: 4) DOI: [10.1109/ICSENS.2018.8589646](https://doi.org/10.1109/ICSENS.2018.8589646)
2. **Rafiq Ahmad**, S. G Surya, José Batista Sales, Hend Mkaouar, S. Y. C. Catunda, D. R. Belfort, Yongjiu Lei, Zhong Lin Wang, Antje Baeumner, Otto S. Wolfbeis, H. N. Alshareef, K.

N. Salama 'KAUSTat: A Wireless, Wearable, Open-Source Potentiostat for Electrochemical Measurements' *IEEE SENSORS 2019*, pp. 1-4, 2019. (Citation: 5)
[DOI: 10.1109/SENSORS43011.2019.8956815](https://doi.org/10.1109/SENSORS43011.2019.8956815)

Book Chapters (06)

1. **Rafiq Ahmad**, Nirmalya Tripathy, and Yoon-Bong Hahn, Chapter 23, Application of Nanodevices in Sensing and Regenerative Medicine, "Handbook of Intelligent Scaffolds for Regenerative Medicine", Pan Stanford (2nd Eds.), Edited by Gilson Khang, 2017. (Citation: NA)
2. Nirmalya Tripathy, **Rafiq Ahmad**, and Gilson Khang, Chapter 22, Nanomaterial-Assisted Tissue Engineering and Regenerative Medical therapy "Handbook of Intelligent Scaffolds for Regenerative Medicine", Pan Stanford (2nd Eds.), Edited by Gilson Khang, 2017. (Citation: NA)
3. Nirmalya Tripathy, **Rafiq Ahmad**, Gilson Khang, Inorganic Nano-theranostics: Strategy Development and Applications, Drug Delivery Nanosystems for Biomedical Applications, Elsevier, Edited by Chandra P Sharma, Chapter 17, pp. 377-419, 2018. (Citation: 1)
4. Nirmalya Tripathy, **Rafiq Ahmad**, Jeong Eun Song, Gilson Khang, Biomimetic Approaches for Regenerative Engineering, Encyclopedia of Biomedical Engineering, Elsevier, 2018. (Citation: 2)
5. Nirmalya Tripathy, Elumalai Perumal, **Rafiq Ahmad**, Jeong Eun Song, Gilson Khang, Hybrid Composite Biomaterials, Principles of Regenerative Medicine, 3rd Edition, edited by Drs. Anthony Atala, Robert Lanza, Robert Nerem and Antonios Mikos, Elsevier, Chapter 40, pp. 364-370, 2019. (Citation: 8)
6. Umesh T. Nakate, Sandip Paul Choudhury, **Rafiq Ahmad**, Pramila Patil, Yogesh T. Nakate, Yoon-Bong Hahn, Graphene Oxide (GO) Nanocomposite Based Room Temperature Gas Sensor. In: Thomas S., Joshi N., Tomer V. (eds) Functional Nanomaterials. Materials Horizons: From Nature to Nanomaterials. Springer, Singapore. pp 303-32, 2020. (Citation: 2)

SCIENTIFIC MEETINGS AND CONFERENCES

International meetings and conferences:

1. Nirmalya Tripathy, **Rafiq Ahmad**, Yoon-Bong Hahn, "Biocompatible Dextran Coating Reduces the Cytotoxicity of ZnO Quantum Dots" 2011 International Conference of Nanomaterials and Nanotechnology (ICNANO) December 18-21, Delhi, India
2. **Rafiq Ahmad**, Nirmalya Tripathy, Jin-Hwan Kim, Yoon-Bong Hahn, "Low Temperature Synthesis of Needle-shaped ZnO nanorods on Ag-coated Si Substrate by Solution process and Immobilization of Glucose Oxidase (GOx) Enzyme for Glucose Biosensor" 2011 International Conference of Nanomaterials and Nanotechnology (ICNANO) December 18-21, Delhi, India
3. **Rafiq Ahmad**, Nirmalya Tripathy, Yoon-Bong Hahn, "High-Performance Cholesterol Sensor Based on ZnO Nanorods Field Effect Transistor" 2013 International Symposium on Nature-Inspired Technology (ISNIT) January 6-9, Kangwon-do, South Korea
4. Nirmalya Tripathy, **Rafiq Ahmad**, Yoon-Bong Hahn, "Comprehensive Study on Toxicology of Surface-Coated ZnO Nanoparticles in Human Alveolar Adenocarcinoma Cells" 2013 The

XIII International Congress of Toxicology (ICT) June 30-4, Seoul, South Korea

5. Nirmalya Tripathy, Tae-Keun Hong, **Rafiq Ahmad**, Han-Sol Jeong, Yoon-Bong Hahn, "A Comprehensive In Vitro and In Vivo Study Of ZnO Nanoparticles Toxicity" 2013 The XIII International Congress of Toxicology (ICT) June 30-4, Seoul, South Korea
6. **Rafiq Ahmad**, Nirmalya Tripathy, Jin Hwan Kim, Yoon-Bong Hahn, "A Solution-Gated Hybrid Field Effect Transistor for Simultaneous Detection of Glucose, Cholesterol and Urea" 2013 Nano Korea July10-12, Seoul, South Korea
7. **Rafiq Ahmad**, Nirmalya Tripathy, Jin Hwan Kim, Yoon-Bong Hahn, "A Solution-Gated Hybrid Field Effect Transistor for Simultaneous Detection of Glucose, Cholesterol and Urea" 2013 9th World Congress of Chemical Engineering & Incorporating 15th Asian Pacific Confederation of Chemical Engineering Congress (WCCE9 & APCCChE) August 18-23, Seoul, South Korea
8. Yong-Kyu Park, **Rafiq Ahmad**, Yoon-Bong Hahn, "Pattern-Controlled Vertical and Lateral Growth of ZnO Nanorod Arrays for High Performance Transistors and Biosensors" 224th ECS Meeting, San Francisco, CA, October 27-November 1, 2013, USA.
9. Mohammad Vaseem, **Rafiq Ahmad**, Aa-Raw Hang, Yoon-Bong Hahn, "Wide Linear-Range Detecting Nonenzymatic Glucose Biosensor Based on CuO Nanoparticles Inkjet-Printed on Electrodes" The 5th International Workshop on Flexible & Printable Electronics (IWFPE 2013), November 20th (Wed)-22nd (Fri), 2013 at Core Rivera Hotel in Jeonju, Korea
10. Da-Un-Jin Jung, **Rafiq Ahmad**, Nirmalya Tripathy, Hwa-Young Yang and Yoon-Bong Hahn, "Flexible, Non-enzymatic FET Glucose Sensor based on NiO Quantum Dots Decorated ZnO Nanorods on Polyimide" The joint congress of ACTS-2014 & CGOM11, June 17- 20, 2014, Nara, Japan
11. Nirmalya Tripathy, **Rafiq Ahmad**, Ko Hyan Aa, Gilson Khang, Yoon-Bong Hahn, "Smart ZnO-embedded pH-responsive Liposomes for Cancer Therapy: Triggering Mechanism and Drug Release Behavior" 2014 CRS Annual Meeting-Controlled Release Society, July 12-16, Chicago, USA
12. **Rafiq Ahmad**, Da-Un-Jin Jung, Yoon-Bong Hahn, "High-performance hybrid biosensor for simultaneous detection of glucose, cholesterol and urea based on ZnO nanorods field-effect transistor arrays" 11th Korea-Japan Symposium on Materials and Interfaces. November 05-08, Jeju Island, 2014, South Korea
13. Da-Un-Jin Jung, **Rafiq Ahmad**, Seung-Hyeon Jeon, Yoon-Bong Hahn, "NiO quantum dots decorated ZnO nanorods for fabrication of flexible non-enzymatic FET glucose sensor" 11th Korea-Japan Symposium on Materials and Interfaces, November 05-08, 2014, Jeju Island, South Korea
14. Hwa-Young Yang, **Rafiq Ahmad**, Mohammad Vaseem, Won-Yeop Rho, Dae-Geun Choi, Yoon-Bong Hahn, "Inverted Bulk Heterojunction Solar Cells with Nanoimprinted ZnO and ZnO Quantum Dots Embedded SiO₂ Layers" 11th Korea-Japan Symposium on Materials and Interfaces, November 05-08, 2015, Jeju Island, South Korea
15. Nirmalya Tripathy, **Rafiq Ahmad**, Yoon-Bong Hahn, "Tailored Lysozyme-ZnO Nanoparticle Conjugates as Nanoantibiotics" 39th International Conference and Expo on Advanced Ceramics and Composites, January 25 - 30, 2015, Hilton Daytona Beach Resort and Ocean Center, Daytona Beach, Florida, USA
16. **Rafiq Ahmad**, Da-Un-Jin Jung, Yoon-Bong Hahn, "Simultaneous Detection of Glucose, Cholesterol and Urea with Integrated ZnO Nanorods Field-Effect Transistor Array Biosensors" 39th International Conference and Expo on Advanced Ceramics and Composites, January 25 - 30, 2015, Hilton Daytona Beach Resort and Ocean Center, Daytona Beach, Florida, USA
17. Kiesar Sideeq, **Rafiq Ahmad**, M. Yasir Khan, H.-Y. Yang, W.-Y. Rho, Yoon-Bong Hahn,

"Synthesis of Low-temperature Sintering Silver Precursor Ink for the Fabrication of Highly Conductive Flexible Electronics by Spin Coating" International Workshop on Flexible & Printed Electronics (IWFPE) November 04-06, 2015, Jeonju, South Korea

18. Nirmalya Tripathy, **Rafiq Ahmad**, Hyun Ah Ko, Yoon-Bong Hahn, Gilson Khang, "Enhanced Anticancer Potency Using an Acid-responsive ZnO Incorporated Liposomal Drug Delivery System", 19th annual Regenerative Medicine Workshop at Hilton Head, 2015 May 13-16, South Carolina in Harbour Town.
19. Nirmalya Tripathy, **Rafiq Ahmad**, Hyeon Kuk, Yoon-Bong Hahn, Gilson Khang, "Enhanced Anticancer Potency Using an Acid-responsive ZnO Incorporated Liposomal Drug Delivery System", 4th TERMIS World Congress, 2015 September 8-11, Boston, MA, USA.
20. Nirmalya Tripathy, **Rafiq Ahmad**, Yoon-Bong Hahn, Gilson Khang, "Outstanding Antibiofilm Properties of Sodium-doped Zinc Oxide Thin Film on Glass", European Materials Research Society Spring Meeting, 2016 May 2-6, Lille, France.
21. Kiesar Sideeq, **Rafiq Ahmad**, Yousheng Wang, Yoon-Bong Hahn, "Low-temperature Sintering Highly Conductive Silver Ink for Flexible electronics" 2016 November 23-24, The 8th International Workshop on Flexible & Printable Electronics (IWFPE 2016) at National Intangible Heritage Center in Jeonju, South Korea
22. **Rafiq Ahmad**, Min-Sang Ahn, Yoon-Bong Hahn, "Solution Process Synthesis of High Aspect Ratio ZnO Nanorods on Electrode Surface for Sensitive Electrochemical Detection of Uric Acid" Materials Challenges in Alternative and Renewable Energy (MCARE 2017), February 20-24, Jeju Island, South Korea [**Oral Presentation**]
23. Kiesar Sideeq Bhat, **Rafiq Ahmad**, Yousheng Wang and Yoon-Bong Hahn, "Low-temperature Sintering of Highly Conductive Silver Ink for Flexible Electronics" Materials Challenges in Alternative and Renewable Energy (MCARE 2017), February 20-24, Jeju Island, South Korea
24. **Rafiq Ahmad**, 28th World Congress on Biosensors 2018, 12-15 June, Miami, Florida, USA.

Domestic Meeting and Conferences:

1. **Rafiq Ahmad**, Kil-Mok Lee, Yoon-Bong Hahn, "Low Temperature Growth of ZnO Nanorod Arrays on Ag-coated Si Substrate by Solution process and Optimization of Glucose Oxidase (GOx) Immobilization for Glucose Bio-sensors" 2010 KICHe Spring Meeting April 27-29, Daegu Exco, South Korea
2. Nirmalya Tripathy, **Rafiq Ahmad**, Yoon-Bong Hahn, "Biocompatible Dextran Coating Reduces the Cytotoxicity of ZnO Nanoparticles" 2012 KICHe Spring Meeting April 25-27, Jeju Island, South Korea
3. **Rafiq Ahmad**, Nirmalya Tripathy, Yoon-Bong Hahn, "Synthesis of ZnO nanotube on Si/Ag Substrate as Biosensors for Cholesterol", 2012 KICHe Spring Meeting April 25-27, Jeju Island, South Korea
4. **Rafiq Ahmad**, Nirmalya Tripathy, Jin-Hwan Kim, Yoon-Bong Hahn, "Highly selective wide linear-range detecting glucose biosensors based on aspect-ratio controlled ZnO nanorods directly grown on electrodes" 2012 KICHe Spring Meeting April 25-27, Busan, South Korea [**Oral Presentation**]
5. **Rafiq Ahmad**, Yoon-Bong Hahn, "Zinc Oxide Nanostructures for Sensing Application", BIN Fusion Workshop, 2012. 17-18 may 2012, South Korea [**Oral Presentation**]
6. Nirmalya Tripathy, **Rafiq Ahmad**, Mohammad Vaseem, Yoon-Bong Hahn, "Mesoporous ZnO Nanoclusters through Dissolution of Polystyrene@ZnO Core-shells" 2012 KICHe Fall Meeting October 24-26, Busan, South Korea
7. **Rafiq Ahmad**, Nirmalya Tripathy, Yoon-Bong Hahn, "High-performance cholesterol sensor

using solution-grown ZnO nanorods based FET” 2012 KICChE Fall Meeting October 24-26, Busan, South Korea

8. **Rafiq Ahmad**, Nirmalya Tripathy, Jin-Hwan Kim, Yoon-Bong Hahn, “Highly Selective Wide Linear-range Detecting Glucose Biosensors Based on Aspect-ratio Controlled ZnO Nanorods Directly Grown on Electrodes” 2012 KICChE Fall Meeting October 24-26, Busan, South Korea
9. Nirmalya Tripathy, **Rafiq Ahmad**, Yoon-Bong Hahn, “A Comprehensive *In Vitro* And *In Vivo* Study of ZnO Nanoparticles Toxicity” 2013 KICChE Spring Meeting January 24-26, Muju, South Korea
10. **Rafiq Ahmad**, Nirmalya Tripathy, Yoon-Bong Hahn, “High-performance cholesterol sensor based on the solution-gated field effect transistor fabricated with ZnO nanorods” 2013 KICChE Spring Meeting January 24-26, Muju, South Korea
11. Nirmalya Tripathy, **Rafiq Ahmad**, Jin Hwan Kim, Yoon-Bong Hahn, “Comprehensive Study on Toxicology of Surface-Coated ZnO Nanoparticles in Human Alveolar Adenocarcinoma Cells” 2013 KICChE Spring Meeting April 24-26, Daegu, South Korea
12. **Rafiq Ahmad**, Nirmalya Tripathy, Jin Hwan Kim, Yoon-Bong Hahn, “Needle-Structured ZnO NRs on Ag electrode for Highly Efficient Glucose Sensor” 2013 KICChE Spring Meeting April 24-26, Daegu, South Korea
13. Nirmalya Tripathy, **Rafiq Ahmad**, Ko Hyan Aa, Gilson Khang, Yoon-Bong Hahn, “*In Vitro* Photodynamic Cancer Therapy with Ultra-high Drug Loaded ZnO Hollow Carriers” 2013 KICChE Autumn Meeting October 23-25, Gwangju, South Korea
14. **Rafiq Ahmad**, Nirmalya Tripathy, Yong-Kyu Park, Yoon-Bong Hahn, “High performance hybrid biosensor for simultaneous detection of glucose, cholesterol and urea based on ZnO nanorods field effect transistor arrays” 2013 KICChE Autumn Meeting October 23-25, Gwangju, South Korea **[Oral Presentation]**
15. **Rafiq Ahmad**, Nirmalya Tripathy, Da-Un-Jin Jung, Yoon-Bong Hahn, “Highly Sensitive Hydrazine Chemical Sensor Based on ZnO Nanorods Field-Effect Transistor” 2014 KICChE Spring Meeting April 23-25, Changwon, South Korea
16. Nirmalya Tripathy, **Rafiq Ahmad**, Seung Hyuck Bang, Jiho Min, Yoon-Bong Hahn, “Outstanding Antibiofilm Features of Quanta-CuO Thin Film on Glass” 2014 KICChE Spring Meeting April 23-25, Changwon, South Korea
17. Da-Un-Jin Jung, **Rafiq Ahmad**, Nirmalya Tripathy, Yoon-Bong Hahn, “Flexible, Non-enzymatic FET Glucose Sensor Based on NiO Quantum Dots Decorated ZnO Nanorods on Polyimide” 2014 KICChE Spring Meeting April 23-25, Changwon, South Korea
18. **Rafiq Ahmad**, Da-Un-Jin Jung and Yoon-Bong Hahn, “Free-standing ZnO Nanorods Based Field-effect Transistor for Highly Efficient Ammonia Chemical Sensor”, 2014 KICChE Fall Meeting October 22-24, Daejeon, South Korea
19. **Rafiq Ahmad**, Nirmalya Tripathy, Yong Kyu Park and Yoon-Bong Hahn, “Fabrication of Highly Sensitive Uric Acid Biosensor Based on Directly Grown ZnO Nanosheets on Electrode Surface”, 2015 KICChE Spring Meeting April 22-24, Jeju Island, South Korea
20. **Rafiq Ahmad**, Kiesar Sideeq, M. Yasir Khan, Seung Hui Seo, Hwa-Young Yang and Yoon-Bong Hahn, “A Robust Enzymeless Glucose Sensor Based on CuO Nanoseed Modified Electrodes”, 2015 KICChE Fall Meeting October 21-23, Daehwa-dong Ilsan-seogu, South Korea
21. Muhammad Yasir Khan, **Rafiq Ahmad** and Yoon-Bong Hahn, “Band Alignment Effect in Ag-CuO/CuO MQWs Fabricated by All Step Solution Process”, 2016 KICChE Fall Meeting April 21-23, Daehwa-dong Ilsan-seogu, South Korea
22. **Rafiq Ahmad**, Seo Yunseo, Min-Sang Ahn, Kiesar Sideeq Bhat, M. Yasir Khan and Yoon-

Bong Hahn, "High Enzyme Loading and Enhanced Sensing Performance of ZnO Nanosheets Hierarchical Microspheres", 2016 KICChE Spring Meeting April 27-29, Busan, South Korea

23. Kiesar Sideeq Bhat, **Rafiq Ahmad**, Wang You-Sang, Tehmina muhmodi, and Yoon-Bong Hahn, "Naive Synthesis of Low Temperature Sintering Silver Organic Precursor Ink for Fabrication of Highly Conductive Flexible Electronics by Spin Coating and Nozzle-jet Techniques" 2016 KICChE Spring Meeting April 27-29, Busan, South Korea
24. **Rafiq Ahmad**, Min-Sang Ahn and Yoon-Bong Hahn, "Ammonium Ion Detection in Solution Using Vertically Grown ZnO Nanorods Based Field-effect Transistor" 2016 KICChE Fall Meeting October 21-23, Daejeon, South Korea
25. **Rafiq Ahmad**, Min-Sang Ahn, Kiesar Sideeq Bhat and Yoon-Bong Hahn, "Highly Efficient Nonenzymatic Glucose Sensor Based on CuO Modified Vertically-grown ZnO Nanorods on Electrode" 2017 KICChE Spring Meeting April 26-28, Jeju Island, South Korea
26. Kiesar Sideeq Bhat, **Rafiq Ahmad**, Yoo Jin Young, Min-Sang Ahn, and Yoon-Bong Hahn, "Nozzle-jet Printed Flexible Biosensor Based Field-effect Transistor for High Performance Glucose Detection" 2017 KICChE Spring Meeting April 26-28, Jeju Island, South Korea