



Dr. O. S. Asiq Rahman

Assistant Professor

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Bio-Sketch (Optional) (Max: 200 words)

I, O.S. Asiq Rahman currently working as an Assistant Professor in Centre for Research, Dhanalakshmi Srinivasan University, Trichy. I worked as a Postdoctoral Fellow in the Department of Metallurgical and Materials Engineering, IIT Madras. I completed my Doctoral Degree in the Department of Metallurgical and Materials Engineering at IIT Patna in December 2019. During my doctoral research period, I worked in several research works, especially in coatings, and was published in various Internationally Peer-reviewed journals. Before joining the doctoral studies, I worked as a Research Fellow under the SERB-DST sponsored project at IIT Patna. I also worked as a Research Assistant in the Department of Nanoscience and Technology at Pondicherry University for one year after completing the Master's degree. Apart from this, I have also setup and taken in-charge for the Plasma spray coating lab, Mechanical and Tribological characterization laboratory at IIT Patna.

Specialization

Materials Science and Engineering, Nanoscience and Technology, Electrical and Electronics

Courses Offered

21GEN03	Basic Electrical & Electronics Engineering
21ECE61	Analog and Digital Electronics

Research Interests

Carbon Nanomaterials, 2D Materials, Metal and Ceramic Nanocomposites, Plasma Spray and Cold Spray Technology, Coatings, Wettability, Energy devices, EMI Shielding, Mechanical and Tribological Properties

Awards/Honours/Affiliations

- Institute Innovation Council Ambassador, Dhanalakshmi Srinivasan University
- Institute Postdoctoral Fellowship from Indian Institute of Technology Madras.
- Best Research Poster award received at the International Conference on Emerging Trends in Materials and Manufacturing Engineering (IMME'17) at National Institute of Technology, Trichy.
- Best Research Poster award received at the Research Scholar Day 2018 event at Indian Institute of Technology Patna.
- Research fellowship at Indian Institute of Technology Patna funded by Department of Science & Technology (DST-SERB), Government of India.
- Qualified GATE exam in the year 2010 with a percentile of 93.33.

Work History

- Assistant Professor, Dhanalakshmi Srinivasan University (April 2022 – Till date)
- Postdoctoral Fellow, Indian Institute of Technology Madras (January 2021 – March 2022)

- Project Officer (MUAY Project), Indian Institute of Technology Madras (March 2020 – December 2020)
- Research Fellow (SERB-DST Project), Indian Institute of Technology Patna (October 2014 – January 2018)
- Research Assistant, Pondicherry University (May 2013 – June 2014)

Education History

- Ph.D. Metallurgical and Materials Engineering (2019), Indian Institute of Technology Patna, India.
- M. Tech. Nanoscience and Technology (2013), Pondicherry University, India.
- B. Tech. Electrical and Electronics Engineering (2011), Pondicherry University, India.

Publications with link or DOI

1. Pushpender Singh, Aminul Islam, Niranjana Pandit, Satish Indupuri, O. S. Asiq Rahman, Shailesh Mani Pandey, Anup Kumar Keshri, Plasma sprayed graphene/carbon nanotube reinforced Lanthanum-Cerate hybrid composite coating, *Ceramics International* (Available online 30 November 2022)
2. Krishna Kant Pandey, Ravi Kumar Singh, OS Asiq Rahman, Sumit Choudhary, Rahul Verma, Anup Kumar Keshri, Insulator-conductor transition in carbon nanotube and graphene nanoplatelets reinforced plasma sprayed alumina single splat: Experimental evidence by conductive atomic force microscopy, *Ceramics International*, 2020, 46, 24557 – 24563. (IF: 4.527, h5 index: 88)
3. Asiq Rahman, O. S; Mukherjee, B; Priyadershini, S; Gunjan, M.R; Raj, R; Aruna, S.T; Keshri, A. K. Investigating the Wetting Phenomena and Fabrication of Sticky, Para-hydrophobic Cerium Oxide Coating, *Journal of the European Ceramic Society*, 2020, 40, Pages 5749-5757 (IF: 5.302, h5 index: 64)
4. Swarnima Singh, Krishna Kant Pandey, Asiq Rahman O S, Swati Haldar, Debrupa Lahiri, Anup Kumar Keshri, Investigation of Crystallinity, Mechanical Properties, Fracture toughness and cell proliferation in Plasma Sprayed Graphene NanoPlatelets Reinforced Hydroxyapatite Coating, 2020, *Materials Research Express*, 15, 015415. (IF: 1.620, h5 index: 40)
5. Asiq Rahman, O.S; Mukherjee, Biswajyoti.; Islam, Aminul; Pandey, Krishna; Keshri, Anup Kumar, Deposition of multi-scale thickness graphene coating by harnessing extreme heat and rapid quenching: Towards Commercialization, *ACS Applied Materials & Interfaces*, 2019, 11, 28, 25500-25507. (IF: 9.229, h5 index: 169)
6. O. S. Asiq Rahman, Biswajyoti Mukherjee, Aminul Islam, Anup Kumar Keshri, "Instant Tuning of Superhydrophilic to Robust Superhydrophobic and Self Cleaning Metallic Coating: Simple, Direct, One-Step and Scalable Technique. *ACS Appl. Mater. Interfaces*, 2019, 11 (4), 4616–4624. (IF: 9.229, h5 index: 169)
7. Sony Priyadershini, O.S. Asiq Rahman, Krishna Kant Pandey, Anup Kumar Keshri, Remarkable improvement in tribological behavior of plasma sprayed carbon nanotube and graphene nanoplatelets hybrid reinforced alumina nanocomposite coating, *Ceramics International*, 2019, 45, 5768-5778. (IF: 4.527, h5 index: 88)
8. A, Amudha; H D, Shashikala; O S, Asiq Rahman; Keshri, Anup Kumar; hosakoppa, Nagaraja, Effect of graphene oxide loading on plasma sprayed alumina-graphene oxide composites for improved anticorrosive and hydrophobic surface, *Surface Topography: Metrology and Properties – IOP science Journal* (Published on 14 June 2019). DOI: 10.1088/2051-672X/ab2707, ISSN No: 2051-672X. (IF: 2.038, h5 index: 22)
9. Biswajyoti Mukherjee, Aminul Islam, Krishna Kant Pandey, O.S. Asiq Rahman, Rishow Kumar, Anup Kumar Keshri, Impermeable CeO₂ overlay for the protection of plasma sprayed YSZ thermal barrier coating from molten sulfate-vanadate salts, *Surface and Coating Technology*, 2019, 358, 235-246. (IF: 4.158, h5 index: 58)
10. B. Mukherjee, R. Kumar, A. Islam, O. S. Asiq Rahman, Anup Kumar Keshri, "Evaluation of strength-ductility combination by in-situ tensile testing of graphene

- nano platelets reinforced shroud plasma sprayed Nickel-Aluminium coating”, *Journal of Alloys and Compounds*, 765(2019), 1082-1089. (IF: 5.316, h5 index: 103)
11. Aminul Islam, Kundan Kumar, Krishna Kant Pandey, Biswajyoti Mukherjee, O.S. Asiq Rahman, Anirban Chowdhury, Anup Kumar Keshri, Exceptionally high fracture toughness of carbon nanotube reinforced plasma sprayed lanthanum zirconate coatings, *Journal of Alloys and Compounds*, 777 (2019), 1133-1144. (IF: 5.316, h5 index: 103)
 12. O S Asiq Rahman, M Sribalaji, Biswajyoti Mukherjee, Tapas Laha, Anup Kumar Keshri, Synergistic effect of hybrid carbon nanotube and graphene nanoplatelets reinforcement on processing, microstructure, interfacial stress and mechanical properties of Al₂O₃ nanocomposites, *Ceramics International*, 44 (2018), 2109-2122. (IF: 4.527, h5 index: 88)
 13. Aminul Islam, Biswajyoti Mukherjee, M. Sribalaji, O.S. Asiq Rahman, P. Arunkumar, K. Suresh Babu, Anup Kumar Keshri, Role of hybrid reinforcement of carbon nanotubes and graphene nanoplatelets on the electrical conductivity of plasma sprayed alumina coating, *Ceramics International*, 2018, 44, 4508-4511. (IF: 4.527, h5 index: 88)
 14. Biswajyoti Mukherjee, Asiq Rahman O.S, Aminul Islam, Sribalaji M, Anup Kumar Keshri, Plasma sprayed carbon nanotube and graphene nanoplatelets reinforced alumina hybrid composite coating with outstanding toughness, *Journal of Alloys and Compounds*, 727 (2017), 658-670. (IF: 5.316, h5 index: 103)
 15. O.S. Asiq Rahman, Nitin P. Wasekar, G. Sundararajan, Anup Kumar Keshri, Experimental investigation of grain boundary misorientations and nanotwinning induced strengthening on addition of silicon carbide in pulse electrodeposited nickel tungsten composite coating, *Materials Characterization*, 116, (2016), 1–7. (IF: 4.342, h5 index: 51)
 16. M. Sribalaji, O.S. Asiq Rahman, P. Arunkumar, K. Sureshbabu, Nitin P. Wasekar, G. Sundarajan, Anup Kumar Keshri, Role of Silicon Carbide in Phase Evolution and Oxidation Behavior of Pulse Electrodeposited Nickel-Tungsten Coating, *Metallurgical and Materials Transactions A*, (2016) 1-12. (IF: 2.556, h5 index: 43)
 17. Biswajyoti Mukherjee, O.S. Asiq Rahman, M. Sribalaji, Srinivasa Rao Bakshi, Anup Kumar Keshri, Synergistic effect of carbon nanotube as sintering aid and toughening agent in spark plasma sintered molybdenum disilicide-hafnium carbide composite, *Materials Science and Engineering A*, 678 (2016) 299-307. (IF: 5.234, h5 index: 84)
 18. M. Sribalaji, O.S. Asiq Rahman, Tapas Laha, Anup Kumar Keshri, Nanoindentation and nanoscratchbehaviour of electroless deposited nickel-phosphorus coating, *Materials Chemistry and Physics*, 177, (2016), 220-228. (IF: 4.094, h5 index: 56)
 19. O. S. Asiq Rahman, V. Chellasamy, N. Ponpandian, S. Amirthapandian, B.K. Panigrahi, P. Thangadurai, A facile green synthesis of reduced graphene oxide by using pollen grains of *Peltophorum pterocarpum* and study of its electrochemical behavior, *RSC Advances*, 2014, 4, 56910-56917. (IF: 3.361, h5 index: 101)