

Prof. (Dr.) Avanish Kumar Srivastava

Affiliation

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- *Outstanding Professor* – Academy of Scientific and Innovative Research.
- *President* – Electron Microscope Society of India.
- *Chief Editor* – Applied Innovative Research.

Educations and research areas

Dr. Avanish Kumar Srivastava received his M.Sc. (Hons.) in physics from IIT Roorkee, UOR (1986), M. Tech. in materials science from IIT Kanpur (1988) and Ph.D. in metallurgy from IISc Bangalore (1996), in the faculty of engineering. His prolific research as applied to understanding the nucleation-growth mechanisms, phase transformations, microstructures & defects of a variety of materials in the form of bulk and fascinating nano-scaled is outstanding and known by the peers world-wide. He has contributed significantly in various projects in the area of advanced materials pertaining to (i) Rapidly solidified metallic systems, (ii) Nanostructures, (iii) Composites, (iv) Solar energy, (v) Thermoelectrics, (vi) Magnetic, (vii) Waste to wealth, and (viii) Safety, Health & Environment.

Contribution in research and academics

Dr. Srivastava has published about 300 research articles in reputed international journals, more than 250 papers & invited talks in different scientific meetings in India and abroad. He has filed/granted 12 patent into his credit, along with 11 technology/knowhow transfers to various private partners. Some of his outstanding publications in the field of material science & engineering and nanomaterials are in (i) Nano Letters, also highlighted in SCIENCE (ii) NATURE Communication, (iii) Small, (iv) Chem Sus Chem, (v) NanoScale, (vi) J. Mater. Chem., (vii) Nano Energy, (viii) Acta Materialia, (ix) Metallurg. Mater. Trans., (x) Materials Today Chemistry and (xi) Mater. Sci. Engg.. A publication in Small, on Graphene – Silver Nanocomposites, has been cited about 550 times since its publication in 2009. He has published a Book entitled, Oxide Nanostructures: Growth, Microstructures and Properties. He is instrumental in the development of standard documents under ISO Nanotechnology program (ISO TC 229).

Dr. Srivastava was instrumental in establishing Analytical High Resolution Transmission Electron Microscopes facilities which became an important part of the Centre for Nanoscale Science at CSIR-NPL New Delhi. In addition, the facility of FE-SEM with EDS and EBSD was added in the laboratory with the efforts of Dr. Srivastava. A similar facility of Analytical TEM has been established now at CSIR-APMRI, Bhopal. He has played a key role in organizing various conferences / meetings of international repute in India and abroad. He has also served as Head (designate) of Centre for Calibration and Testing at CSIR – NPL, New Delhi. As a coordinator of Young Scientists' Conclave under India International Science Festival, IISF – 2016, he was able to organize large number of plenary lectures, oral & poster presentations and demonstrations / presentations by Start-ups, etc. He was instrumental in the design and development of various courses of Academy of Scientific and Innovative Research (AcSIR) program of CSIR and was the coordinator of the courses on

Nanostructured Materials and Advance Materials Characterization Techniques at CSIR-NPL. He educates young researchers and students in the field of materials growth, characterization and evaluation of various properties. In brief, several national and international conferences / workshops/ seminars have been organized under his dynamic leadership.

He has served as Coordinator of National Mirror Working Group on Measurement and Characterization of Bureau of Indian Standards (BIS-MTD33, ISO/TC-229). His work on advanced materials pertaining to growth and characterization employing electron & ion microscopy techniques has been cited on the world leading scientific websites of MRS, USA and IOP, Asia & UK.

Under his leadership, Centre for Advanced Radiation Shielding and Geopolymeric Materials has been established and inaugurated by Dr. Harsh Vardhan, Hon. Minister of Health & family welfare, Science & Technology, Earth Sciences, Govt. of India, and Chair, Executive Board, WHO and Vice President, CSIR, at CSIR-AMPRI Bhopal, on March 13, 2021.

National and International collaborations

Dr. Srivastava has travelled about fifteen countries under different scientific & technical capabilities and also conducted research as visiting faculty/scientist in various institutes like; University of Paris & University of Reims France, Technical University Darmstadt Germany; Okayama University of Science Japan, University of Arkansas USA, Pohang University of Science and Technology South Korea, Department of Energy, Italy, Hungarian Academy of Sciences Hungary, Argonne and Brookhaven National Laboratories of USA. In India, he has carried out innovative research in collaborations with IISc Bangalore, BHU Varanasi, IITs Delhi, Kanpur & Hyderabad.

Awards and fellowships

1. President, Electron Microscope Society of India (EMSI)
 2. Metallurgist of the Year, Ministry of Steel, Government of India, Award – 2011.
 3. Member, Governing Council, Technology Information Forecasting and Assessment Council (TIFAC), Department of Science Technology, Ministry of Science and Technology, Government of India.
 4. NRDC National Meritorious Invention Award – 2020, Societal Innovation, DSIR, Ministry of Science and Technology, Govt. of India..
 5. Ranked among top 2% scientists of the world, by Stanford University USA, 2020.
 6. Member, Task Force Committee, CSIR Integrated Skill Initiative and Jigyasa.
 7. Member, Standing Scientific Advisory Group (SSAG), Ministry of Mines, Govt. of India.
 8. Fellow, Electron Microscope Society of India – 2016.
 9. Fellow, The Indian Institute of Metals – 2014.
 10. Materials Research Society of India (MRSI) Medal – 2011.
 11. Member, Board of Studies, School of Nanoscience and Technology, NIT Kurukshetra.
 12. Guest of Honor – Received By the Director, National Institute of Technology, Kurukshetra, June 01, 2013
 13. INSA – KOSEF fellowship (2009-2010): International bilateral exchange program
 14. Co-Chairman, Session: Carbon Nanotubes, post treatment, International Conference on Materials for Advanced Technologies, Singapore, June 26-July 01, 2011
 15. Outstanding publications in the field of Metallurgy and Nanomaterials are in (i) NANO LETTERS, IF 12.9. Highlighted in SCIENCE IF 41.84 (ii) NATURE Communication IF 14.91 (iii) SMALL, IF 13.28 (iv) Nano Energy, IF 17.88 (v) Chem Sus Chem IF 8.92 (vi) NanoScale, IF 7.79 (vii) J. Mater. Chem. IF 6.62, (viii) Materials Today Chemistry IF 8.3, and (ix) 4 papers in Acta Materialia, IF 8.2. A publication in SMALL, on Graphene – Silver Nanocomposites, has been cited about 550 times since its publication in 2009.
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16. BOYSCAST fellow (2000-2001) awarded by DST at Universite Paris-Sud France.
17. Kwan Im Thong Hood Fellowship Award, Singapore (2000).
18. Completed CSIR Scientific Leadership Development Program initiated by DG-CSIR.
19. Establishment of Analytical High Resolution Transmission Electron Microscope facility which became an important part of the Centre for Nanoscale Science at NPL, New Delhi and AMPRI, Bhopal. Two additional facilities: FE-SEM and FE-TEM with EELS are also installed.
20. Convenors of Electron Microscopy Conferences Years: 2004 and 2014. MRS Website USA: Electron Microscopy work on nanomaterials was briefed along with Dr. Srivastava's photograph (2^{8th} October, 2007).
21. Coordinator – National Mirror Working Group on Measurement and Characterization (BIS-MTD33, ISO/TC-229). Represents India in ISO-Nanotechnologies meetings. Visited NIST, USA (Year – 2009 & 2015) as a member of Indian delegation and invited speaker.
22. Involved in different National and International Projects in the area of (i) Nanomaterials, (ii) Metal/metal oxide composites, (iii) Energy related materials, including Thermoelctric, (iv) Magnetic Materials, and (v) Safety, Health & Environment of Nanomaterials.
23. Member, International Advisory Board, Asia-Pacific Electron Microscopy Conference, Kanazawa, Japan, June 7 to 11, 2004
24. Member, Executive Committee, IIM – Delhi Chapter (2010-12)

Membership in Organizational/National/International Committees:

1. Indian Institute of Metals, IIM, India. (Life Member)
2. Materials Research Society of India, MRSI, India. (Life Member)
3. The Minerals, Metals and Materials Society, TMS, USA. (1992-1997)
4. American Nano Society (Life Member)
5. Indian Science Congress Association, ISCA, India. (Life Member)
6. Electron Microscopy Society of India, EMSI, India (Life Member)
7. Indo-French Technical Association, IFTA (Life Member)
8. Laser and Spectroscopy Society of India, LASSI (Life Member)
9. Indian Association of Analytical Scientists (Life Member)
10. Metrology Society of India (Life Member)

Other Scientific and Professional Activities

1. Secretary, Materials Science Society, IIT Kanpur (1987)
2. Co-convenor, Symposium on Metallurgical Research, IISc Bangalore (1991)
3. Convenor, Symposium on Metallurgical Research, IISc Bangalore (1992)
4. Member, Organizing Committee, Indo – Russian Workshop on Micromechanical Systems, NPL New Delhi (1999)
5. Member, Research Council of CSIR-NAL Bengaluru (2020-2022), and Management Councils of CSIR-NISCPR Delhi (2021-2023) and CSIR-CRRI Delhi (2020-2022).
6. Member, Management Council, NPL New Delhi (1998-99)
7. Joint Secretary, Electron Microscope Society of India (2006-2008)
8. Member, Organizing Committee, Thirteenth International Workshop on the Physics of Semiconductor Devices, New Delhi, India, (2005)
9. Member, Organizing Committee, 35th National Seminar on Crystallography, New Delhi, India, February 22-24, 2006
10. Member, Advisory Board, Nanomaterials: Engineering and Technology, Allahabad, February 18-19, 2011
11. Member, Advisory Board, International Conference on Electron Nanoscopy, Hyderabad, July 6-8, 2011
12. Refereed research articles for different international journals