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### PROF. MILAN KUMAR SANYAL

#### INSA Senior Scientist

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#### Personal Details

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#### Selected Publications

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#### Papers in Journals

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1. Evidence for endothermic quasicrystalline-crystalline phase transitions in Al<sub>6</sub>CuMg<sub>4</sub>, Sanyal, M.K., Sahni, V.C. and Dey, G.K., Nature, 328, 704 (1987).
2. X-ray scattering study of capillary wave fluctuation at a liquid surface, Sanyal, M.K., Sinha, S.K., Huang, K.G., Ocko, B.M., Phys. Rev. Lett., 66, 628 (1991).
3. Determination of small fluctuations in electron density profiles of thin films : layer formation in polystyrene film, Sanyal, M.K., Basu, J.K., Datta, A. and Banerjee, S., Europhys. Lett. 36, 265 (1996).
4. Growth mechanism of Langmuir-Blodgett films, Basu, J.K., Hazra, S. and Sanyal, M.K., Phys. Rev. Lett., 82, 4675 (1999).
5. Observation of charge density wave characteristics in conducting polymer nanowires: possibility of Wigner crystallization, Rahman, A., Sanyal, M. K., Phys. Rev. B76, 045110 (2007).
6. Formation and ordering of gold nanoparticles at the toluene-water interface, Sanyal, M.K., Agrawal, V.V., Bera, M.K., Kalyanikutty, K., Daillant, J., Blot, C., Kubowicz, S., Konovalov, O. and Rao, C.N.R., J. Phys. Chem. C 112, 1739(2008).



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# Curriculum Vitae

1. Name in full: Milan Kumar Sanyal
2. Date of Birth: 6<sup>th</sup> January 1954
3. Nationality: India
4. Field of Specialization: Condensed Matter Physics
5. Current affiliations: Emeritus Professor, Saha Institute of Nuclear Physics  
Adjunct Professor, International Centre for Materials Science,  
Jawaharlal Nehru Centre for Advanced Scientific Research.
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7. Educational background (College / University) onwards

B.Sc. (Physics Honours) First in First Class, University of Kalyani 1974  
Graduation in BARC Training School (Physics) 20<sup>th</sup> Batch 1976  
M.Sc. (Physics) University of Bombay 1981  
PhD (Science) University of Mumbai 1987

8. Professional Positions held in chronological order

- Scientific Officer, Bhabha Atomic Research Centre, 1977-1995
- Research Associate, Brookhaven National Lab, USA 1989-1992
- Professor, SINP, February 1995- January 2016
- Director, Saha Institute of Nuclear Physics (SINP), July 2009-Jan 2014
- Emeritus Professor SINP, February 2016 – Present
- Emeritus Professor (Raja Ramanna Fellow) Satyendran Nath Bose National Centre for Basic Sciences, May 2018 – April 2021
- Adjunct Professor, International Centre for Materials Science, Jawaharlal Nehru Centre for Advanced Scientific Research, April 2014 – Present

9. Details of Important Awards / Honors / Recognitions of the nominee

- First prize in the Fifth Colloquium for Young Physicists (1987) Indian Physical Society.
- N.S. Satya Murthy memorial Young Scientist award of the Indian Physics Association, 1987.
- Medal of Material Research Society, India 2000.
- Fellow, Indian National Science Academy (2001).
- Fellow, Indian Academy of Sciences (2002).
- Fellow, The National Academy of Sciences, India (2003).
- J.C. Bose Fellowship 2007 – 2018.
- DAE Raja Ramanna Lecture in Physics 2008.
- Member, Indian National Science Academy Council (2010-2013).
- Member, Science Advisory Committee of the Cabinet, Government of India (2012-15).
- CNR Rao Prize Lecture in Advanced Materials, MRSI (2013).
- President, Indian Physical Society (2009-2013).
- President, Indian Physics Associations (2010-2013).
- Fellow, The World Academy of Science (2016).
- National Research Award, Nano Science and Technology, Government of India (2017)
- Raja Ramanna Fellowship, Department of Atomic Energy 2018 – 2021.
- Indian National Science Academy Senior Scientist 2021 – Present.

10. Highlights of the major scientific contributions of the nominee

Prof. Milan K. Sanyal has carried out pioneering research in the field of synchrotron X-ray scattering to study single nanoparticle and ultra-thin films grown on solid or liquid interfaces. Few examples of his research results are tunable optical properties of semiconductor quantum-dots, charge density wave state in conducting polymer nanowires with optically tunable energy-gap, ordering of organic films in Liquid interfaces and stripe-to-skyrmion phase-transition in topological magnetic films. He is an elected Fellow of all three Science Academies in India and The World Academy of Sciences (TWAS). Prof. Sanyal is a former Director and an Emeritus Professor in Saha Institute of Nuclear Physics.