

Name: Godbole Rohini Madhusudan

FASc, FNA, FNASc, FTWAS, D. Lit. (S.N.D.T. Univ.)

Position: Prof., Indian Institute of Science(IISc), Bangalore

Specialization: Elementary Particle Physics: Field Theory and Phenomenology

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Education: B.Sc. 1972, Pune University, First position in the University; M.Sc. 1974, Indian Institute of Technology, Institute Silver Medal; Ph.D. 1979, State Univ. of New York at Stony Brook, USA. D.Litt. (Honoris Causa), S.N.D.T. Women's University, Mumbai, 2013.

Career: Tata Institute of Fundamental Research (TIFR), Bombay: Visiting Fellow 1979–1982, Adjunct Faculty: 2005-2008; Insitute of Science, Bombay : Council for Scientific and Industrial Reseach (CSIR) Fellow 1982; University of Bombay: Lecturer 1982-1988, Reader 1988 -1995; University of Dortmund, Germany: Visiting Scientist 1986–1988; IISc, Bangalore, Centre for High Energy Physics: Associate Professor 1995–1998 (Chair from 1996), Professor 1998– (Chair till 2002); CERN (Geneva) and DESY (Hamburg): Visiting Scientist. 2002–03; Theoretical Physics Department and International Centre for Theoretical Sciences, TIFR, Adjunct Faculty: 2005-2011; CERN Scientific Associate: June 2010 to February 2011; Univ. of Utrecht, Visiting Professor, February 2011-August 2011, Staff Associate of the International Centre for theoretical Physics (ICTP) (2013-2016)

Scientific Work: Worked extensively on different aspects of particle physics phenomenology over the past three decades, authoring more than 280 research publications in refereed journals and arXiv e-prints. Many have been cited highly. The work regarding hadronic structure of high energy (real and virtual) photons pointed out dominance of an entirely new class of processes which could yield directly, invaluable information about this structure and started off the physics program of 'resolved photon processes' at HERA. This work also has had important implications for the design of next generation electron positron colliders, due to the large hadronic backgrounds, whose possible existence it revealed. Suggested innovative ways to search for the top quark, Higgs bosons and other new particles at the Large Hadron Collider (LHC) and at the International Linear Collider (ILC). One of the analyses suggested by her to probe physics beyond the Standard Model using properties of the recently found Higgs boson has been used as a reference by the experiments at the LHC.

Co-authored a book "Theory and phenomenology of sparticles: An account of four-dimensional $N=1$ supersymmetry in high energy physics" (Published by World Scientific, January 2005).

Election to Academies:

- Young Associate of the Indian Academy of Sciences (IASc) 1985-1988
- Associate Member of the International Centre for Theoretical Physics, Trieste 1984-1992, 1995-2001
- Fellow: The World Academy of Sciences, TWAS 2009
- Fellow: Indian Academy of Sciences, 1992,
- Fellow: Indian National Science Academy (INSA), 2003;
- Fellow : National Academy of Sciences (NASI), India, 2007.

Memberships of National/International Committees:

- Member, Board of Governors, Indian Institute of Technology, Mumbai (2015-)
- Member: Commission C11 on Particles and Fields of the International Union of Pure and Applied Physics (2002-2005, 2008-2011)
- Member: International Detector Advisory Group for the International Linear Collider (2007- 2012)
- Member: Scientific Advisory Committee to the Cabinet (SAC-C) of India (2007- 2012)
- Founder Chair of the IASc Panel for Women in Science (2005-);
- Member, Standing committee of the Govt. of India on Women in Science (2009-)
- Member, National Committee of IUPAP, 2008-2011
- Member, Council of the Indian National Science Academy, India, 2011-2014
- Member, Linear Collider Board of the Linear Collider Collaboration (2013-2016)
- Member, DAE-DST task force for India at CERN, (1995-)
- Member, Indian DST delegation to Bulgaria (2009)
- Member, Indian Delegation for the Biennial Ministerial meeting between UK and India (2012).
- Member, DAE-DST Steering committee for India at CERN (2015-)
- Member, Current Science Association (membership by invitation only)

Editorial :

- Chief Editor, Pramana, Indian Journal of Physics, 2008-2015 (Associate Editor 1998-2008)
- Member, Editorial Board, TRIPS series of text books in Physics in India, 2000-2010;
- Member, Editorial Board of 'Current Science', the

interdisciplinary journal of the IASc, 1997-2008.

Educational and Research Initiatives :

- Chair, the planning committee for SERC schools in Theoretical High Energy Physics in India, (member since 1997, Chair 2005-2011);
 - One of the founders of the successful series of workshops on High Energy Physics Phenomenology (WHEPP) which take place in India since 1991
- Research supervision of around 20 research students and postdoctoral fellows.
- Guiding undergraduate students in summer as well as through the year, giving lectures in schools and colleges, writing articles in Science Education Journals like Resonance.

Collaborative Research Initiatives:

- Founding of the Indian Linear Collider Working Group and ILC - India Forum,
- Indo-US projects with University of Hawaii,
- Indo-French projects with LAPP -TH (Annecy) and LPT (Orsay) and collaboration with INFN (Frascati).
- INDO US Centre for BSM Physics with Univ. of Hawaii, Univ. of Madison, USA.
- Joint project on 'Topics in Top and Higgs Physics', with Univ. of Louvain, Belgium.
- Co-ordinator, Indo French Laboratory in Theoretical High Energy Physics (IFLTHEP) supported by C.N.R.S.

Some of the Awards & Distinctions (from 2000 onwards):

- Sheel Memorial Lecture Award of NASI , 2000.
- Indian Institute of Technology, Powai, Distinguished Alumnus Award, 2004.
- Jawaharlal Nehru Centenary Visiting Fellowship of INSA , 2005.
- IISc Rustom Choksi Award for Excellence in Research 2006.

- MSIL chair for Physical Sciences, Indian Institute of Science, 2006-2009.
- Asiatic Society of Kolkata, Meghnad Saha Memorial Gold Medal for Physics, 2007
- DST J C Bose Fellowship of the Government of India , 2008.
- INSA Satyendranath Bose Medal for Theoretical Physics, 2009
- TIFR Alumni Association Excellence in Research Award, 2010.
- D.Litt. (Honoris Causa), S.N.D.T. Women's University, Mumbai, December 2013.

Conferences: Invited speaker, lecturer, member of the Program Advisory Committee and session organiser for a large number of International Conferences and Workshops, held all over the world in and out of India. Some of the examples of talks are : Summary talk at Photon 2007 in Italy, Concluding remarks at LCWS06 in India, Plenary talks at LCWS00 in USA, LCWS04 in France, SUSY 2012 in Beijing, Lectures in CERN schools, Corfu school, Schools in Vietnam, Algeria , school in ICTP, Trieste, Manchester University, U.K.

Activities related to Women in Science: Plenary speaker at the first International conference on Women in Physics organised by the International Union of Pure and Applied Physics (IUPAP) as the 'Indian Success Story'. Co-edited a book 'Lilavati's Daughters: Women Scientists of India', containing (auto)biographical sketches of about 100 Women Scientists of India, released in December 2005 and also a book called 'A Girls' Guide to a Life in Science' containing material which we hope will inspire young girls to take up a career in Science. Interestingly, this book along with the book on Supersymmetry were included in suggested reading for two separate courses, one in physics and one in Humanity, at Stanford University in one semester. Directed a unique survey entitled "The trained Scientific Women power in India: what fraction are we losing and why?" . Worked towards pioneering a variety of programs, at various fora , to raise

awareness on the subject of Women in Science. Member of the AASSA (Association of Academies and Societies of Science in Asia) committee on Women in Science. Member, Inter Academy Panel for Women in Science.