



Telangana Academy of Sciences

Cordially Invites you to the



Seventh Dr. Manohar V.N. Shirodkar

Memorial Lecture

Endowment Instituted by
Smt. Rajkumari Indira Devi Dhanarajgiri

To be delivered by

Prof. Mriganka Sur, FRS

Newton Professor of Neuroscience
Director, Simons Center for the Social Brain Massachusetts Institute of Technology, Boston, USA

on

How does the brain create the mind

at 4.00 PM, on Tuesday, the 8th January, 2019

Venue
Auditorium

CSIR-Indian Institute of Chemical Technology (IICT)
Uppal Road, Hyderabad

Prof. K. Narasimha Reddy
President, TAS

Dr. S. Chandrasekhar
Hon. Secretary, TAS

* Please be in your seat by 3.45 PM

Programme overleaf



Prof. Mriganka Sur

Newton Professor of Neuroscience,
Director, Simons Center for
the Social Brain Massachusetts Institute of Technology, Boston, USA

Prof. Mriganka Sur, FRS is an outstanding neurobiologist. He is a pioneer in the study of brain plasticity and its mechanisms, credited with the discovery of fundamental principles by which networks of the cerebral cortex are wired during development and learning. One of his recent studies addresses the issue of transformation of "seeing" into "action". Prof. Sur studies the organization, plasticity and dynamics of the cerebral cortex of the brain. His laboratory has identified gene networks underlying cortical plasticity, and pioneered high-resolution imaging methods to study cells, synapses and circuits of the intact brain. His group has demonstrated novel mechanisms underlying disorders of brain development, and proposed innovative strategies for treating such disorders. Recently, his laboratory has discovered core functional rules of inhibitory-excitatory neuronal circuits in the cerebral cortex, and revealed dynamics of information flow and transformation across widespread cortical areas during goal-directed behavior. Dr. Sur received the B. Tech. degree in Electrical Engineering from the Indian Institute of Technology, Kanpur; and the PhD degree in Electrical Engineering from Vanderbilt University, Nashville, USA. He has received numerous awards and honors, most recently the Cortical Discoverer Prize of the Cajal Club, and delivered distinguished lectures worldwide. He has trained over 75 doctoral students and postdoctoral fellows, and received awards for outstanding teaching and mentoring. At MIT, he has been recognized with the Sherman Fairchild and Newton Chairs. He is an elected Fellow of the Royal Society of the UK, the National Academy of Medicine, the American Academy of Arts and Sciences, the American Association for the Advancement of Science, the World Academy of Sciences, and the Indian National Science Academy. He is currently Newton Professor of Neuroscience and Director of the Simons Center for the Social Brain at MIT, Boston, USA.

Abstract of the talk: The human mind is an astonishing feat of nature. It is a product of the brain, which has about 90 billion neurons or brain cells organized into discrete processing systems. Each neuron connects with hundreds of other neurons via thousands of connections or synapses. Yet neurons do not connect indiscriminately: synaptic connections between specific sets of neurons create circuits that enable the brain's remarkable information processing capabilities and give rise to cognition. Such specificity arises during brain development, and is sharpened by plasticity and learning. Brain architectures are far from rigid, however. Flexible reconfigurable networks are essential for brain dynamics underlying cognition. Specifying the underlying principles is fundamental to understanding how the brain gives rise to the mind, and ultimately to framing how intelligence akin to humans might be created in the next generation of machines.

Programme

Tuesday, 8th January, 2019

4.00 PM Welcome	: Dr. S. Chandrasekhar , Hon. Secretary, TAS
Dr. Manohar V.N. Shirodkar : A Profile	: Dr. B. Sesikeran , Former Director NIN
Presidential Remarks	: Prof. K. Narasimha Reddy , President, TAS
Introducing the Speaker	: Dr. Ch. Mohan Rao , CSIR-Distinguished Scientist, Former President, TAS
Dr. M.V.N. Shirodkar Memorial Lecture on "How does the brain create the mind"	by : Prof. Mriganka Sur
Brief Remarks by	: Smt. Rajkumari Indira Devi Dhanarajgiri
Vote of thanks	: Dr. Y. Purushotham , Hon. Treasurer, TAS