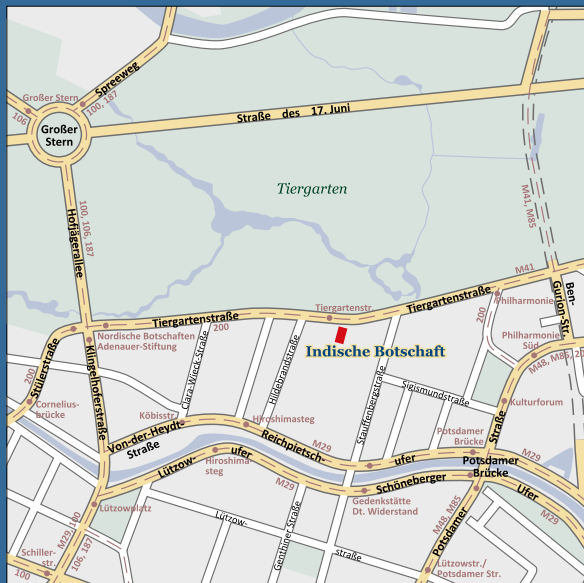


# How to get there



## Venue

Embassy of India  
Tiergartenstraße 17  
10785 Berlin

The lecture is open to the public and is free of charge.

## Prior registration is required until 13 September 2018.

Registration and Further Information:  
[www.leopoldina.org/en/sood](http://www.leopoldina.org/en/sood)

Please bring your passport or national ID document for security check. You are kindly asked to come early and leave sufficient time for the registration process. Please note that no bags or pieces of luggage larger than handbags are allowed inside the lecture hall.

## German National Academy of Sciences Leopoldina

Founded in 1652, the Leopoldina brings together some 1,500 outstanding scientists from about 30 countries. It is dedicated to the advancement of science for the benefit of humankind and to shaping a better future. In its role as the German National Academy of Sciences, the Leopoldina represents the German scientific community in international committees. It offers unbiased scientific opinions on political and societal questions, publishing independent studies of national and international significance. The Leopoldina promotes scientific and public debate, supports young scientists, confers awards for scientific achievements, conducts research projects, and campaigns for the human rights of persecuted scientists.

[www.leopoldina.org](http://www.leopoldina.org)

## Contact:

Dr Ruth Narmann  
Nationale Akademie der Wissenschaften Leopoldina  
Phone: +49 (0)345 47239-832  
Email: [internationalrelations@leopoldina.org](mailto:internationalrelations@leopoldina.org)

Rajachandran Madhan  
Embassy of India, Berlin  
Phone: +49 (0)30 25795-720  
Email: [science.berlin@mea.gov.in](mailto:science.berlin@mea.gov.in)

## The Indian National Science Academy (INSA)

The Indian National Science Academy (INSA), established in 1935, is an apex body of Indian scientists representing all branches of science with the objectives of promoting science in India and harnessing scientific knowledge for the cause of humanity and national welfare, safeguarding interests of Indian scientists, establishing formal linkages with international bodies, promoting international collaborations and giving opinion on national issues after debate and discussions.

[www.insaindia.org](http://www.insaindia.org)



Leopoldina  
Nationale Akademie  
der Wissenschaften



EMBASSY OF INDIA

BERLIN

सत्यमेव जयते

## Nature Inspired Physics: Why Do We Flock Together?

Leopoldina-INSA Lecture  
by INSA-President Ajay Kumar Sood

Tuesday, 18 September 2018 | 5:00 pm  
Embassy of India | Tiergartenstraße 17 | 10785 Berlin

In Cooperation with the Embassy of India in Berlin

Photo: @freshidea - stock.adobe.com

# Leopoldina-INSA Lecture Series

In Cooperation with the Embassy of India in Berlin

Leopoldina and INSA have cooperated closely over many years, e.g. by jointly organizing scientific conferences in India and Germany. The close and friendly collaboration is based on a cooperation agreement signed in 2007. Prof Sood's talk is part of the Leopoldina-INSA lecture series, in which high-ranking members of both academies present their work to the general public in order to promote the visibility of Indian and German science.

The 2018 lecture is organized in cooperation with the Embassy of India in Berlin in their ongoing effort to promote Indo-German science and research collaboration.

## Programme

**Tuesday, 18 September 2018 | 5:00 pm – 8:30 pm**

**4:00 pm – 5:00 pm | Meet & Greet**

Registration & Refreshments

**5:00 pm – 5:05 pm | Welcome**

H.E. Ms Mukta Dutta Tomar  
*Ambassador of India to the Federal Republic of Germany*

**5:05 pm – 5:15 pm | Opening Address**

Professor Dr Jörg Hacker  
*President of Leopoldina*

**5:15 pm – 6:15 pm Lecture & Discussion**

**Nature Inspired Physics: Why Do We Flock Together?**  
Prof Dr Ajay K. Sood  
*President of INSA and Professor for Physics at the Indian Institute of Science, Bangalore*

**6:15 pm – 6:30 pm | Words of Thanks**

**6:30 pm – 8:30 pm | Reception**

## Nature Inspired Physics: Why Do We Flock Together?

Flocks of birds flying every morning and evening or of ants crawling in one direction are a common sight. Flocking, a self-organized motion of vast numbers of individuals of same species in a common direction, is a common behavior in many animals like ants, locusts, birds, fishes etc. This talk will bring out how nature inspires us to explore such fascinating phenomena in laboratory. As physicists, Professor Sood and his team have tried to understand flocking behavior by working with inanimate asymmetric brass rods made active by placing them on rapidly vibrating surface amongst spherical beads. They have discovered that a small number of active particles can coherently transport a large passive cargo, which they believe is potentially relevant in biological systems. Professor Sood will present his recent studies on how to separate active particles with same size but with different activities. His experiments will bring out novel emerging issues in systems out of equilibrium. He will discuss how these experiments may be able to shed light, for example on the unfortunate phenomena of stampede, which has been earlier ascribed as a fluid dynamics problem.

## Ajay Kumar Sood

President, Indian National Science Academy, New Delhi, and  
Professor, Department of Physics, Indian Institute of Science,  
Bangalore

Professor Ajay K. Sood, FRS, is currently the President of the Indian National Science Academy and the Secretary General of The World Academy of Sciences (TWAS). He was the President of the Indian Academy of Sciences from 2010 to 2012. His research interests include physics of both quantum and soft matter, with a strong focus on innovative experiments. One of his contributions in nanoscience is the generation of electrical voltage in carbon nanotubes due to flow of liquids and gases, an effect now known as "Sood Effect". Professor Sood's work in soft matter includes its unusual flow and ultrasensitive immunoassays developed by exploiting fascinating effects of electric field on colloids. His work has been recognized by way of many honors and awards. These include the Fellowship of the Royal Society, London; the civilian honor, Padma Shri by Government of India; S.S. Bhatnagar Prize; TWAS Prize in Physics; and National Award in Nanoscience and Nanotechnology by Government of India.



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URL: <http://www.physics.iisc.ernet.in/~asood/>

