

Government of India
NATIONAL BOARD FOR HIGHER MATHEMATICS
(Department of Atomic Energy)
OYC Building, C.S.M. Marg, Mumbai 400 001

**APPLICATION FORM FOR THE GRANT OF FINANCIAL ASSISTANCE FOR
ORGANIZING SYMPOSIUM/SEMINAR/WORKSHOP/CONFERENCE ETC.**

{ Eight (8) copies of this form, duly filled should reach this office at least
Three Months before the start of the Conference. }

1. Title of the Programme :

***International Conference on Modeling, Analysis and Simulations of Multiscale
Transport Phenomena***

2. Name of the Convener/

Organizing Secretary

along with a brief C.V.: **1. Prof. Somnath Bhattacharyya**, *Head* of the Department of Mathematics

IIT Kharagpur

2. Asst. Prof. Hari Shankar Mahato, Department of Mathematics,

IIT Kharagpur

3. Full postal address of the

Convener/Organizing Secretary: Department of Mathematics, IIT Kharagpur

721302 Kharagpur

West Bengal, India

4. Organizing Committee: 1. Prof. Somnath Bhattacharyya (Organizer)

2. Asst. Prof. Hari Shankar Mahato (Organizer)

3. Prof. Sourav Mukhopadhyay

4. Prof. R. Nanduri

5. Name of the Institution/

Scientific Society/

Specialist Association

Organizing the Meeting: Department of Mathematics

Indian Institute of Technology (IIT) Kharagpur

West Bengal, 721302 India

6. Proposed dates for

the Programme: July 13th – 15th, 2022

7. Venue of the Programme: Department of Mathematics, IIT Kharagpur via Online Mode.

8. (a) Topics to be covered

- Transport in Porous networks
- Evolution Equations and Their Existence Theories
- Homogenization Theory
- Numerical Techniques and Simulations for Transport Processes
- Free Boundary Problem
- Multiscale modeling of electrokinetic transport
- Computational Linear Algebra
- Numerical Mathematics for Non-linear Systems
- Micro- and Nano-fluidics Modeling
- Theoretical and Computational Fluid Dynamics
- Computational Biology
- Machine learning approach

(b) Relevance & importance

of the Topic Mathematically/
in the context of National needs/
other reasons:

Several physical problems in the fields of physics, chemistry, biology and engineering sciences are governed by linear and nonlinear partial differential equations. One of the important phenomena that can be explained with the help of these equations is chemical transport in a porous medium (e.g. soil, rock, concrete, pellets etc.). The transport processes in porous media, for example in soil, reservoirs, groundwater flow, have been extensively studied in last decades and it has drawn the attention of geologists, hydrologists, mathematicians and others. The aim of this conference/workshop is to investigate such transport processes inside porous media and bring together the leading experts (both national and international) from this field to talk about modeling, analysis and numerical schemes of these transport processes. Modeling and simulation of micro- or nano-scale transport is a challenging topic to fabricate and in-depth analysis of micro- and nano-scale devices.

(c) Names of Resource persons/
invited Speakers who have
tentatively agreed:

1. Prof. Amiya Kumari Pani, IIT Bombay
2. Prof. Tirupathi Gudi, IISc Bangalore
3. Prof. Ameeya Kumar Nayak, IIT Roorkee
4. Prof. Neela Natraj, IIT Bombay
5. Prof. Patrizia Donato, CNRS-Université de Rouen (France)
6. Prof. Adrian Muntean, Karlstad University (Sweden)
7. Prof. Kundan Kumar, Bergen University (Norway)
8. Prof. Sorin Pop, Haseldt University (Belgium)
9. Prof. Ansgar Jüngel, TU Vienna (Austria)
10. Prof. Alexander Mielke, WIAS Berlin, (Germany)
11. Prof. G. D. Veerappa Gowda, TIFR CAM, Bangalore
12. Prof. F.T. Smith, UCL, UK
12. Prof. S. Ghosal, Northwestern University USA
13. Andrew Rees, Univ. Bath, UK
14. Prof. P. Dutta, WSU, USA

(d) Whether proceeding are intended to be published: YES (YES / NO)

9. (a) How many Delegates are expected to participate? National: 10+
Indicate the number of National and Foreign Delegates separately: Foreign: 10+

(b) How many of the Delegates are expected to read Papers? National: 10+
Foreign: 10+

(c) For how many delegates TA/DA is offered and at what rate? National: Rs. 8000/Lecture
Foreign: Rs. 8000/Lecture

10. Details of the total expenditure anticipated: (along with item wise break-up)

1. Per lecture honorarium for Indian Delegates = Rs. 8,000. Total = Rs. 8,000 X 5 = Rs. 40,000
2. Per lecture honorarium for Foreign Delegates = Rs. 8,000. Total = Rs. 8,000 X 5 = Rs. 80,000
3. Technical Staff Fee = Rs. 5000. Total = Rs. 5000 X 2 = Rs. 10,000
4. Journal publication costs: Rs. 20,000

Grand total: Rs. 1,50,000

11. Details of Grants requested received from other Agencies: SERB DST

1. Per lecture honorarium for Indian Delegates = Rs. 8,000. Total = Rs. 8,000 X 5 = Rs. 40,000
2. Accommodation cost = Rs. 1500/day. Total = Rs. 90,000
3. Food and Refreshment = Rs. 50,000
4. Other incidental cost = Rs. 20,000

12. Details of the Support expected from NBHM : We request support from NBHM for following items: (along with the break-up)

1. Lecture honorarium for Indian Delegates
2. Lecture honorarium for Foreign Delegates
3. Technical Staffs Fee
4. Journal publication costs

13. Name of the Authority
who will be responsible
for submitting the Audited
Statement of Accounts/
Utilization Certificate
and other Reports: Continuing Education and Technology
Indian Institute of Technology Kharagpur
721302 Kharagpur
West Bengal, India

14. Name, designation and
address of the Authority
in whose favour payment
of grant is desired: Associate Dean (Outreach)
Continuing Education and Technology
Department of Mathematics, IIT Kharagpur
721302, Kharagpur
West Bengal, India

15. Any other information:

Place: Kharagpur

Date: 16.03.2022

Hari Shankar Mahato
Signature of the applicant

Certificate
(To be signed by the official named in Item 14)

I undertake to receive from the Department of Atomic Energy advance towards conference grant and to submit a utilization certificate for the same after completion of the event.

I hereby state that

- (a) utilization certificate for which application for grant is being forwarded to NBHM, will be submitted within 12 months from the date of closure of financial year; and
(b) that no utilisation certificate(s) is/are pending against the Institute for the grants given to the beneficiary of their Institute by DAE, for more than 12 months from the closure of the financial year.

The DD/cheque may be drawn in favour of **CEP-STC, IIT, KHARAGPUR**

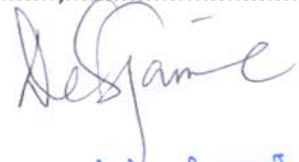
Date: 16.03.2022

Seal

Signature:

Name:

Designation



प्रो. देबजानी चक्रवर्ती
Prof. Debjani Chakraborty
सह संकायाध्यक्ष/Associate Dean
आउटरीच/ Outreach
सीई स्टडी से/आईओई/CE&T/IOE
भा. प्रो. सं., खड़गपुर/IIT Kharagpur

NOTE:-

1. The proposal should be accompanied by a Complete Bio-data and list of Publications of the Convener/Organizing Secretary who has responsibility for the Academic Programme of the Conference.
2. The meeting should be on a well-focused theme or two.
3. The proposal should contain a list of speakers who have tentatively agreed to deliver lectures.
4. The emphasis while selecting participants should be on those who are likely to benefit from this meeting.
5. A consolidated report giving details such as the list of speakers, the titles of the talks, souvenirs/proceedings if any and the list of participants should be sent to the Member Secretary, NBHM after the meeting is held along with the utilization certificate.

International Conference on Modeling, Analysis and Simulations of Multiscale Transport Phenomena

July 13th – 15th, 2022 (Hybrid Mode)



Topics Included

- Transport in Porous networks
- Evolution Equations and Their Existence Theories
- Homogenization Theory
- Numerical Techniques and Simulations for Transport Processes
- Free Boundary Problem
- Multiscale modeling of electrokinetic transport
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- Numerical Methods for Non-linear Systems
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- Computational Biology
- Machine learning approach

List of Speakers

To be announced soon

Last date of registration: June 30th, 2022

For more information: <https://sites.google.com/view/icmasmtp2022/home?authuser=0>

Local Organisers: Prof. Somnath Bhattacharyya and Asst. Prof. Hari Shankar Mahato
Department of Mathematics, IIT Kharagpur, India