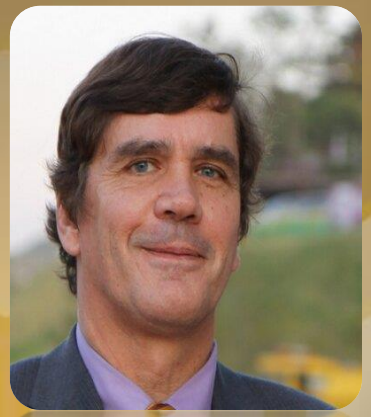
Prof. Marc Madou is currently a Chancellor's Professor of Mechanical & Aerospace Engineering at University of California, Irvine and also a fellow of National Academy of Inventors (NAI), USA. Prof. Madou is also an Editor of Nature's Microsystems and Nanoengineering journal. He has been distinguished visiting honorary professor in IIT Knapur and IIT Kharagpur. Prof. Madou is recognized worldwide for his popular book, "Fundamentals of Microfabrication" that is considered as a bible in this area.



His research interests include Carbon MEMS, Bio-MEMS, CD Microfluidics for Point-of-Care Diagnostics, Electrospun Nanofibers, Sensors and actuators. His exemplary work in the area of Miniaturization science with emphasis on chemical and biological applications has been covered by many national and international media. Prof. Madou has authored 9 books and more than 500 publications in international journals and conferences. He has also co-authored 27 book chapters. His total citations are more than 25,000 with an impressive h-index 71 (Reference: Google Scholar).

Dr. Chandra Shekhar Sharma is an Associate Professor in the Department of Chemical Engineering at IIT Hyderabad. His research interests are carbon thin films and 3-D hierarchical structures, nature inspired functional surfaces, electrospun polymer and carbon nanofibers. Prof. Sharma has 58 peer-reviewed international journal publications to his credit.

Prof. Sharma has received several awards including NASI Young Scientist (2017), SERB Indo-Us Fellowship (2016), IEI Young Engineer (2016), DST INSPIRE Faculty (2015), GYTI Award (2014 and 2015).

Global Initiative on Academic Network (GIAN)

8 days course on

Fluidics on a Compact Disc: A Short Course for Academia and Industry

November 26-December 4, 2018

भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Venue:
Indian Institute of Technology, Hyderabad
https://www.iith.ac.in/~gian/

COURSE OVERVIEW

This is a short course on Fluidics on a Compact disc (CD) for medical diagnostics. The course is intended for scientists and engineers in academia, government institutes and industry. Dr. Madou has given this course worldwide and adapts it for each new engagement to reflect the most recent breakthroughs in this area.

CD based microfluidic technology which combines the benefits of both microfluidics and centrifugal forces in the same device has shown a great potential for many applications including point-of-care diagnostics in the last decade. The potential of this CD-based technology has been delineated for wide spectrum applications ranging from simple to complex assays. CD microfluidics systems use small sample volumes enabling rapid reaction times, automated fluidic handling and cost-effective use of materials and reagents. Furthermore, it is also found suitable for efficient batch processing, multiplexing, and high throughput screening applications.

COURSE OBJECTIVES

The primary objectives of the course are as follows:

1. Why a CD as a diagnostic platform?
2. Fluidics compared. Here we compare all the different alternatives to pumping fluids in a microfluidic platform.
4. Fluidics image acquisition. How do we visualize flow in a rotating platform?
5. CD fluidics theory background.
6. Electrical forces on the CD
- Overview
- Electrochemical Detection on the CD
    - Wi-FI CD
    - C-MEMS Electrodes
    -Redox Amplification on the CD
7. How to fabricate microfluidic CDs?
8. Applications

Sample preparation
DNA Amplification
Detection
Pneumatic propulsion: bringing fluids back to the center
Extreme Point of Care

IMPORTANT DATES

Last date for registration: October 15, 2018
Confirmation to participants: October 25, 2018
Course dates: November 26-December 4, 2018

REGISTRATION DETAILS

Registration Fee:
Students: 2000 INR
Participants from academic institutes, Govt. R&D Labs: 8,000 INR + 18% GST (Total: 9440 INR)
Industry participants:
10,000 INR + 18% GST (Total: 11800 INR)

For foreign students: USD 400

Registration fee includes access to attend all lectures and tutorials, course materials, wi-fi, tea/coffee and water for all eight days.

For hostel accommodation on sharing basis and meals (breakfast, lunch and dinner), ALL participants need to pay additional fee of 5000 INR for all eight days. For hotel accommodation, please write to coordinator directly.

For online registration (with or without additional fee), use the link below: http://www.iith.ac.in/~gian/carbonlab

Direct Link:
https://docs.google.com/forms/d/e/1FAIpQLSfaEWl69YIWZ1nVoGpSeK7c0OkzxuvbFZYsY6OCqGV64PRszA/viewform

EVALUATION & GRADING

There will be an evaluation during the course on the understanding of the concepts and problem solving. Accordingly, a letter grade will be awarded. A completion certificate will also be provided.

Contact us

Dr. Chandra Shekhar Sharma
Associate Professor
Dept. of Chemical Engineering, IIT Hyderabad
Email: carbon_gian@iith.ac.in
Phone: +91-40-2301 6112