



## Indian Nanoelectronics Users' Programme - Idea to Innovation (INUP-i2i)

### 4<sup>th</sup> Hands-on Training on Fabrication of Microfluidic Channel

3<sup>rd</sup> - 9<sup>th</sup> February, 2023

Workshop Coordinators: Prof. Sandeep Kumar Jha and Subhra Datta  
Nanoscale Research Facility, Indian Institute of Technology Delhi



Time (in hours)	Session - Day 1 (3 <sup>rd</sup> Feb, 2023, Friday)	Venue
10:00 – 11:00	Registration	Physics Committee Room (MS-412)
11:00 – 11:30	Welcome address and introduction to INUP-i2i & Hands on training Program Prof. Neeraj Khare/Prof. Sandeep Kumar Jha	
Theme: Lecture		
11:30 – 13:00	Clean-room Safety/ NRF Visit (Manjeet, Amish and Mohit)	Physics Committee Room (MS-412)
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Lecture		
14:30 – 17:00	Introduction to Sensors, Transducers and Biosensors Prof. Sandeep Kumar Jha (Centre for Biomedical Engineering)	Physics Committee Room (MS-412)



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Time (in hours)	Session - Day 2 (4 <sup>th</sup> Feb, 2023, Saturday)	Venue
Theme: Lecture		
10:00 – 13:00	Introduction to microfabrication process for microfluidic and Lab-on-Chip devices Prof. Sandeep Kumar Jha (Centre for Biomedical Engineering)	Physics Committee Room (MS-412)
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Lecture		
14:30 – 17:00	Diffusion and flow processes in microfluidic operations: fundamentals and simulations Prof. Subhra Datta (Department of Mechanical Engineering)	Physics Committee Room (MS-412)



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Time (in hours)	Session - Day 3 (5 <sup>th</sup> Feb, 2023, Sunday)	Venue
Theme: Lecture		
10:00 – 13:00	Introduction to case-use of microfluidic and Lab-on-Chip devices for Biomedical, environmental and agricultural purposes Prof. Sandeep Kumar Jha (Centre for Biomedical Engineering)	Physics Committee Room (MS-412)
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Lab Session		
14:30 – 17:30	Hands-on training on CAD/CAM for photomask preparation (Rishi Raj & Komal Sharma)	Physics Committee Room (MS-412)



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Time (in hours)	Session - Day 4 (6 <sup>th</sup> Feb, 2023, Monday)	Venue
Theme: Lab Session		
10:00 – 13:00	Hands-on training on COMSOL simulation before mask designing (Promasree Majumdar & Ashim Jyoti Nath)	NRF
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Lecture		
14:30 – 17:30	Electro–microfluidics: fundamentals and simulations Prof. Subhra Datta (Department of Mechanical Engineering)	Physics Committee Room (MS-412)

**INUPi2i**



Ministry of Electronics  
& Information Technology  
Government of India

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Time (in hours)	Session - Day 5 (7 <sup>th</sup> Feb, 2023, Tuesday)	Venue
Theme: Lab Session		
10:00 – 13:00	Hands-on training on SU-8 patterning (Rishi Raj & Komal Sharma)	Block 4, Lecture Hall IV A
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Lab Session		
14:30 – 17:30	Hands-on training on Chrome-gold deposition technique (Rishi Raj & Komal Sharma)	Block 4, Lecture Hall IV A



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Time (in hours)	Session - Day 6 (8 <sup>th</sup> Feb, 2023, Wednesday)	Venue
Theme: Lecture		
10:00 – 13:00	Introduction to COMSOL simulation for microfluidic separation Prof. Subhra Datta (Department of Mechanical Engineering)	Physics Committee Room (MS-412)
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Lab Session		
14:30 – 17:30	Hands-on training on PDMS moulding for rapid prototyping of microfluidic and Lab-on-Chip devices (Rishi Raj & Komal Sharma)	Block 4, Lecture Hall IV A



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Time (in hours)	Session - Day 7 (9 <sup>th</sup> Feb, 2023, Thursday)	Venue
Theme: Lab Session		
10:00 – 13:00	Hands-on training on glass-PDMS bonding and characterization of fabricated microfluidic and Lab-on-Chip devices (Rishi Raj & Komal Sharma)	Block 4, Lecture Hall IV A
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Discussions		
14:30 – 17:00	Interactions of participants with faculties and TAs, Concluding remarks, Feedback, Photo-session	Faculty Guest House (Gulmohar)