

5th Hands-on Training on MEMS Devices

17th - 23rd March, 2023

Workshop Coordinators: Prof. Dhiman Mallick, Prof. Bhaskar Mitra and
Prof. Pushparaj Singh

Nanoscale Research Facility, Indian Institute of Technology Delhi

Time (in hours)	Session - Day 1 (17 th March, 2023, Friday)	Venue
10:00 – 11:00	Registration Welcome address and introduction to INUP-i2i & Hands on training Program Prof. Neeraj Khare/Prof. Dhiman Mallick/Prof. Pushparaj Singh	Room Number: MS-420, Department of Physics
Theme: Lecture		
11:00 – 12:00	Introduction to MEMS Prof. Bhaskar Mitra (Mr. Manjeet)	Room Number: MS-420, Department of Physics
12:00 – 13:00	Clean-room Prof. Bhaskar Mitra (Mr. Manjeet)	Room Number: MS-420, Department of Physics
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Lab visit		
14:30 – 17:00	NRF visit (All TAs)	Block VI, NRF

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Time (in hours)	Session - Day 2 (18 th March, 2023, Saturday)	Venue
Theme: Lecture		
10:00 – 11:30	Introduction to MEMS structure Prof. Dhiman Mallick (Mr. Nadeem Beigh)	Room Number: MS-420, Department of Physics
11:30 – 14:00	Device structure and process flow Prof. Dhiman Mallick (Mr. Nadeem Beigh)	Room Number: MS-420, Department of Physics
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Mask Designing		
14:30 – 17:00	Mask Design Software (L-Edit/K-Layout) Mr. Nadeem Beigh/Mr. Khanjan/Vinit	Room Number: MS-420, Department of Physics

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Time (in hours)	Session - Day 3 (19 th March, 2023, Sunday)	Venue
Theme: Video Session		
10:00 – 13:00	Videos Screening (Fabrication/Characterization - Facilities) (TAs, Dr. Gaurav Sharma, Dr. Birendra Kumar, Shiv)	Room Number: MS-420, Department of Physics
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)

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Time (in hours)	Session - Day 4 (20 th March, 2023, Monday)	Venue
Theme: Lecture		
10:00 – 11:30	Introduction to MEMS Sensor Prof. Pushparaj Singh (Mr. Khanjan)	Room Number: MS-420, Department of Physics
11:30 – 14:00	Wafer/Substrate Cleaning & Oxidation Prof. Bhaskar Mitra (Mr. Manjeet)	Room Number: MS-420, Department of Physics
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Lab Session		
14:30 – 17:00	Wafer/Substrate Cleaning Thermal-Oxidation Growth Mr. Nadeem Beigh/Mr. Khanjan	Block VI, NRF

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Time (in hours)	Session - Day 5 (21 st March, 2023, Tuesday)	Venue
Theme: Lecture		
10:00 – 11:30	Introduction to Lithography, Sputtering & Etching Prof. Dhiman Mallick/Prof. Ankur Goswami (Mr. Vinit)	Room Number: MS-420, Department of Physics
11:30 – 13:00	MEMS Characterization Prof. Bhaskar Mitra (Mr. Manjeet)	Room Number: MS-420, Department of Physics
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Lab Session		
14:30 – 17:00	Lithography 1 st level: Spin Coating, Baking, Mask Aligning (Mr. Nadeem Beigh & Mr. Khanjan)	Block VI, NRF

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Time (in hours)	Session - Day 6 (22 nd March, 2023, Wednesday)	Venue
Theme: Lab Session		
10:00 – 13:00	Oxide Etching, Lithography 2 nd level: Spin Coating, Baking, Mask Aligning Mr. Nadeem & Mr. Khanjan	Block VI, NRF
Lunch Break (13:00-14:30)		Faculty Guest House (Gulmohar)
Theme: Lab Session		
14:30 – 17:30	Metallization through Sputtering, Lift off, and Release Mr. Nadeem & Mr. Khanjan	Block VI, NRF

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Time (in hours)	Session - Day 7 (23 rd March, 2023, Thursday)	Venue
Theme: Lab Session		
10:00 – 13:00	Device Characterization (Probe Station) Mr. Nadeem & Mr. Khanjan	Block VI, NRF
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)