

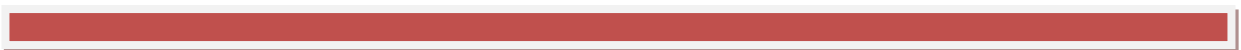
Program Schedule

18th April 2022, Monday

| Time | Event |
|---------------------|--|
| 8:30 AM – 9:30 AM | Registration (Ground Floor Seminar Hall) |
| 9:30 AM – 10:00 AM | Introductory Session – Prof. Akshay Naik |
| 10:00 AM – 10:30 AM | Introduction to Micro Nano Characterization Facility (MNCF) – Dr. Suresha J |
| 10:30 AM – 11:30 AM | NNfC Safety Protocol – Ms. Shruti Hegde |
| 11:30 AM – 12:30 PM | Introduction to Wet Etch Bay and Furnaces – Mr. Naveen H & Mr. Saleem B |
| 12:30 PM – 1:00 PM | Introduction to Thin Films – Mr. Chandan H B |

1:00 PM – 2:00 PM: Lunch Break (Centenary Visitor’s House, IISc)

| Time | Event |
|-------------------|--|
| 2:00 PM – 2:30 PM | Introduction to Lithography – Mr. Vasanth Kumar |
| 2:30 PM – 3:00 PM | Introduction to Dry Etch – Ms. Pavithra S |
| 3:00 PM – 4:00 PM | Introduction to Modules – Ms. Sabiha Sultana |



19th April 2022, Tuesday

| Batch Photovoltaic Cell 09:30 AM – 1:30 PM | Batch MEMS Cantilever 9:30 AM – 1:30 PM | Batch MOS Capacitor 9:30 AM – 1:30 PM | Batch Gas Sensor 9:30 AM – 1:30 PM |
|---|--|--|---|
| Step 1: 1um thermal Oxide wafer thickness measurement Step 2: Lithography for Diffusion and backside protection Step 3: Wet (oxide) Etch and Photoresist stripping | Step 1: Wafer cleaning (RCA) Step 2: Silicon Nitride deposition (LPCVD) | Probe Station 2 / LDV / XPS | SEM / XRD |

1:30 PM – 2:30 PM: Lunch Break (Centenary Visitor’s House, IISc)

| Photovoltaic Cell 2:30 PM – 5:00 PM | MEMS Cantilever 2:00 PM – 5:00 PM | MOS Capacitor 2:30 PM – 5:00 PM | Gas Sensor 2:30 PM – 5:00 PM |
|---|--|------------------------------------|---|
| Gas Sensor Lab and NNfC Annexe 2 Lab Visit (Second Floor SF-31 & SF-33) | Step 3: Thickness measurement using Ellipsometer Step 4: Cantilever Lithography | Raman / AFM / Optical Profilometer | NNfC Annexe 3 Lab Visit (Second Floor SF-30) |

20th April 2022, Wednesday

| Photovoltaic Cell 9:30 AM – 1:00 PM | MEMS Cantilever 9:30 AM – 1:00 PM | MOS Capacitor 9:30 AM – 1:00 PM | Gas Sensor 9:30 AM – 1:00 PM |
|---|--|--|---------------------------------|
| Step 4: RCA cleaning Level 2 Step 5: RCA cleaning Level 1 Step 6: Diffusion | Step 5: Nitride etching using Dry Etching Step 6: Silicon etching, photoresist ashing Using Dry etching | NNfC Annex 1 Lab Visit (Second Floor SF-32) | Probe Station 2 / LDV / XPS |

1:00 PM – 2:00 PM: Lunch Break (Centenary Visitor's House, IISc)

| Photovoltaic Cell 2:00 PM – 5:00 PM | MEMS Cantilever 2:00 PM – 5:00 PM | MOS Capacitor 2:00 PM – 5:00 PM | Gas Sensor 2:00 PM – 5:00 PM |
|--|--|--|------------------------------------|
| Step 7: PSG etching Step 8: Front metal (Al) Deposition | NNfC Annex 1 Lab Visit (Second Floor SF-32) | Gas Sensor Lab and NNfC Annexe 2 Lab Visit (Second Floor SF-31 & SF-33) | Raman / AFM / Optical Profilometer |

21st April 2022, Thursday

| Photovoltaic Cell 9:30 AM – 1:00 PM | MEMS Cantilever 9:30 AM – 1:00 PM | MOS Capacitor 9:30 AM – 1:00 PM | Gas Sensor 9:30 AM – 1:00 PM |
|---|---|--|---|
| Step 9: Lithography Step10: Metal (Al) etching Step 11: back oxide etching with front protection | Gas Sensor Lab and NNfC Annexe 2 Lab Visit (Second Floor SF-31 & SF-33) | NNfC Annexe 3 Lab Visit (Second Floor SF-30) | NNfC Annex 1 Lab Visit (Second Floor SF-32) |

1:00 PM – 2:00 PM: Lunch Break (Centenary Visitor’s House, IISc)

| Photovoltaic Cell 2:00 PM – 5:00 PM | MEMS Cantilever 2:00 PM – 5:00 PM | MOS Capacitor 2:00 PM – 5:00 PM | Gas Sensor 2:00 PM – 5:00 PM |
|--|--------------------------------------|------------------------------------|--|
| Step 12: Back metal (Al) Deposition Step 13: Photoresist stripping Step 14: Forming gas annealing | Solar Simulator / QE / TEM | SEM / XRD | Step 1: 1um thermal oxide and thickness measurement Step 2: Lithography |

22nd April 2022, Friday

| Photovoltaic Cell 9:30 AM – 1:00 PM | MEMS Cantilever 9:30 AM – 1:00 PM | MOS Capacitor 9:30 AM – 1:00 PM | Gas Sensor 9:30 AM – 1:00 PM |
|--|--|--|---|
| Probe Station 2 / LDV / XPS | AFM / Optical Profilometer Session starts from 11.00 am | Step 1: RCA cleaning Step 2: Oxidation 50nm (NNfC Annexe 1 & 2 - Second Floor SF-32 & SF-33) | Step 3: Sputtering Metal (Cr/Au) |

1:00 PM – 2:00 PM: Lunch Break (Centenary Visitor’s House, IISc)

| Photovoltaic Cell 2:00 PM – 5:00 PM | MEMS Cantilever 2:00 PM – 5:00 PM | MOS Capacitor 2:00 PM – 5:00 PM | Gas Sensor 2:00 PM – 5:00 PM |
|--|--|--|--|
| Cleanroom – Lithography Demo | SEM / XRD | Step 3: Thickness measurement Step 4: Front Metal Deposition (NNfC Annexe 1 & 2 - Second Floor SF-32 & SF-33) | Step 4: Lift off Step 5: Thickness measurement Dektak Step 6: Lithography Sensing layer |

Holiday – 23rd April 2022, Saturday

Holiday – 24th April 2022, Sunday

25th April 2022, Monday

| Photovoltaic Cell 9:30 AM – 1:00 PM | MEMS Cantilever 9:30 AM – 1:00 PM | MOS Capacitor 9:30 AM – 1:00 PM | Gas Sensor 9:30 AM – 1:00 PM |
|--|--|--|--|
| Solar Simulator / QE / TEM | Probe Station 2 / LDV / XPS | Step 5: Lithography Step 6: Al wet etch and PR stripping Step 7: PR coat front side and etching of back oxide Load sample for back metallization (NNfC Annexe 1 & 2 - Second Floor SF-32 & SF-33) | Step 7: ZnO deposition by sputtering Step 8: Lift off |

1:00 PM – 2:00 PM: Lunch Break (Centenary Visitor’s House, IISc)

| Photovoltaic Cell 2:00 PM – 5:00 PM | MEMS Cantilever 2:00 PM – 5:00 PM | MOS Capacitor 2:00 PM – 5:00 PM | Gas Sensor 2:00 PM – 5:00 PM |
|--|---|--|---------------------------------|
| Raman / AFM / Optical Profilometer | NNfC Annexe 3 Lab Visit (Second Floor SF-30) | Step 8: Back metallization sputter Step 9: PR strip Step 10: Annealing (NNfC Annexe 1 & 2 - Second Floor SF-32 & SF- 33) | Solar Simulator / QE / TEM |

26th April 2022, Tuesday

| Photovoltaic Cell 9:30 AM – 1:00 PM | MEMS Cantilever 9:30 AM – 1:00 PM | MOS Capacitor 9:30 AM – 1:00 PM | Gas Sensor 9:30 AM – 1:00 PM |
|--|--------------------------------------|------------------------------------|---|
| SEM / XRD | Cleanroom – Lithography Demo | Solar Simulator / QE / TEM | Gas Sensor Lab and NNfC Annexe 2 Lab Visit (Second Floor SF-31 & SF- 33) |

1:00 PM – 2:00 PM: Lunch Break (Centenary Visitor's House, IISc)

| Photovoltaic Cell 2:00 PM – 5:30 PM | MEMS Cantilever 2:00 PM – 5:30 PM | MOS Capacitor 2:00 PM – 5:30 PM | Gas Sensor 2:00 PM – 5:30 PM |
|---|--------------------------------------|------------------------------------|---------------------------------|
| Interaction with participants - Final projects (Ground Floor Seminar Hall) | | | |

27th April 2022, Wednesday

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|--|---|--|---|
| Photovoltaic Cell 9:30 AM – 1:00 PM | MEMS Cantilever 9:30 AM – 1:00 PM | MOS Capacitor 9:30 AM – 1:00 PM | Gas Sensor 9:30 AM – 1:00 PM |
| NNfC Annexe 3 Lab Visit (Second Floor SF-30) | Raman Session starts from 11.00 am | Preparation for Presentation | Preparation for Presentation |

1:00 PM – 2:00 PM: Lunch Break (Centenary Visitor’s House, IISc)

| Time | Event |
|--------------------------|--|
| 2:00 PM – 5:30 PM | <u>Presentation by Participants:</u> (Ground Floor Seminar Hall) |
| 2:00 PM – 2:30 PM | MEMS Cantilever batch |
| 2:30 PM – 4:15 PM | MOS Capacitor batch |
| 4:15 PM – 5:00 PM | Photovoltaic Cell batch |
| 5:00 PM – 5:30 PM | Gas Sensor batch |

28th April 2022, Thursday

| Time | Event |
|----------------------------|---|
| 9:30 AM – 10:30 AM | Clean Room & Characterization Quiz Session (First Floor MMCR = FF-11) |
| 10:30 AM – 12:30 PM | Workshop Report Submission by participants (INUP Office = SF-36) |
| 12:30 PM – 2:30 PM | Lunch Break (Centenary Visitor’s House, IISc) |
| 2:30 PM – 4:00 PM | Feedback / Certificate Distribution / Concluding Session (First Floor MMCR = FF-11) |