

FUTURE PLANS

DEPARTMENT OF PHYSICS



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PERSONAL DETAILS

- ♠ Name: Ujjwal Man Joshi
- ♠ Date of Birth: November 27, 1966
- ♠ Permanent Address: New Road, Kathmandu

ACADEMIC BACKGROUND

- ♠ M. Sc., 1991, Tribhuvan University (TU)
- ♠ M. S., 2001, Norwegian University of Science and Technology (NTNU)
- ♠ Ph. D., 2013, Kathmandu University (KU)

CURRENTLY INVOLVED IN

Teaching:

- ♠ Biophysics (M. Sc. Physics I-II)
- ♠ Energy Resources & Environmental Impacts
(B. Sc. Applied Physics IV-II)
- ♠ General Physics I Labs (Undergraduate I-I)

University service:

- ♠ Head, Department of Physics

CURRENTLY INVOLVED IN

Research:

- ♠ Plasma diagnostics, Plasma applications in three areas: Surface treatment, Plasma medicine and Plasma agriculture
- ♠ Supervising three Ph. D. students (in the field of Material Science)
- ♠ Planning to involve one more Ph. D. student/ research fellow under the fee waiver scheme recently introduced by the university

DEPARTMENT OF PHYSICS

(Recently restructured)

- ♠ Advanced Physics Lab II, four cabins & one dark room (06 – 201)
- ♠ General Physics Lab I, Plasma Physics Lab, HoD room & one cabin (06 – 202)
- ♠ General Physics Lab II, Advanced Physics Lab I, Professor room & one cabin (06 – 203)
- ♠ Meeting room, four cabins & one printer room (06 – 204)



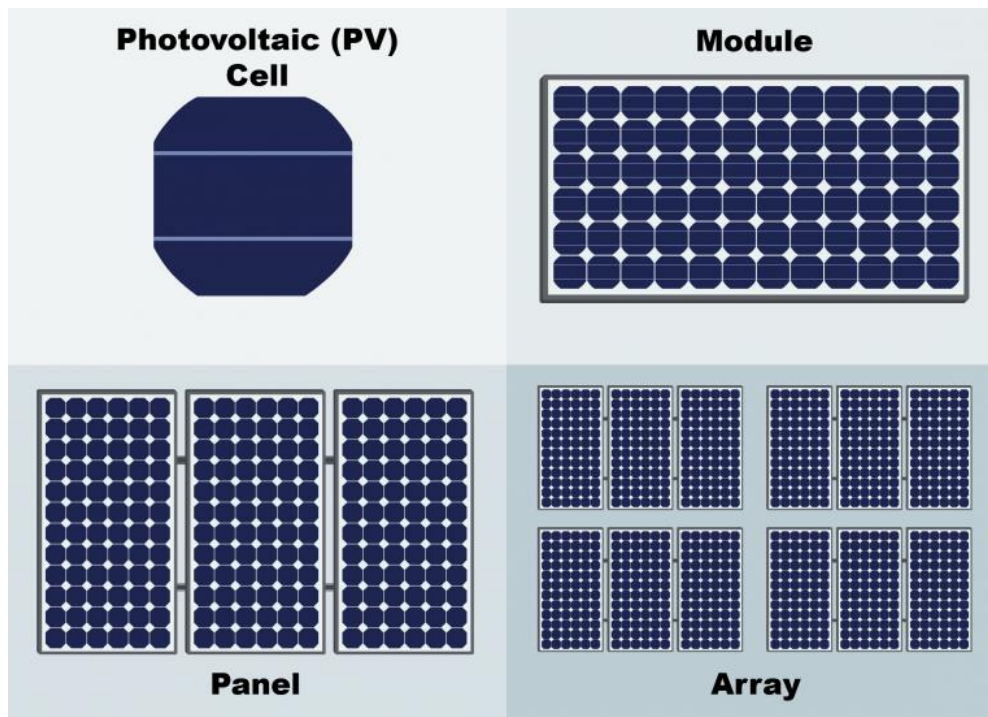
Plasma Physics Laboratory (06 – 202B)



Advanced Physics Laboratory I (06 – 203B)

FUTURE PLANS – PHYSICAL FACILITIES

- ♠ Net zero energy department as a whole including all the labs
- ♠ Peak output: 10 kW, considering average daily sunshine hour duration of 6 hours



FUTURE PLANS – PHYSICAL FACILITIES

- ♠ Solar PV array comprises of 24 solar PV modules each of 425 W
- ♠ Battery storage: 12 V, 100 Ah (8 numbers)
- ♠ Inverter: 15 kW (for design safety margin)

- ♠ Alternative Energy Promotion Centre (AEPC)
- ♠ Suryodaya Urja Pvt. Ltd.

- ♠ Already installed 2 modules each of 130 W

FUTURE PLANS – ACADEMIC PROGRAMS

- ♠ Start B. Sc. in General Physics (with support from funding agencies) (basic/ fundamental science programs – reduced fees, scholarships, subsidy, etc.)
- ♠ Start B. Sc. in PCM and PSM (in coordination with Chemistry and Mathematics departments)
- ♠ Restart B. Sc. in Applied Physics (with new approach)

FUTURE PLANS – RESEARCH

- ♠ Establish PECVD system in the Plasma Physics Laboratory. (High voltage 0 – 18 kV line frequency power supply, high voltage 0 – 20 kV high frequency 10 – 30 kHz power supply, rf 50 – 500 W power supply)
- ♠ Establish Theoretical and Computational Research Centre (TCRC).

FUTURE PLANS – RESEARCH

- ♠ Re-install solar radiation measuring instruments (radiometers):
 - ♠ Pyrheliometer
(for direct solar radiation measurement)
 - ♠ Pyranometer
(for global or total solar radiation measurement)



Pyrheliometer

FUTURE PLANS – MOU

- ♠ MOU with Phutung Research Institute (PRI)
(Photonics, Nanophotonics and Optical Physics)
- ♠ Recently, PRI has supported two M. Sc. Physics students' theses with stipend through TWAS
- ♠ Establish Photonics Lab in collaboration with PRI

Thank you