

Green Office, IIT Guwahati

Established: Yes

Location: Department of Chemical Engineering

Contact Details:

Prof. Ramagopal Uppaluri

Professor-in-Charge, Green Office
Department of Chemical Engineering
IIT Guwahati
Guwahati – 781039
Ph: 0091 361 2582260 (O)
Email: profgo@iitg.ernet.in, greenoff@iitg.ernet.in

Steering Committee

S. No.	Faculty	Expertise
1	Prof. R. Uppaluri (Professor in charge, Green Office)	Techno-economics, Process Design
2	Prof. U. K. Saha (Mechanical Engineering)	Wind Energy
3	Dr. Rajeev Kumar Bhattacharjya (Civil Engineering), Associate Dean, Institute Works	Water Resources
4	Dr. Ajay Kalamdhad (Civil Engineering)	Solid Waste Management
5	Dr. P. K. Ghosh (Civil Engineering)	Wastewater treatment
6	Dr. Praveen Tripathi (Electronics and Electrical Engineering)	Electrical Power Systems
7	Dr. Senthil Murugan (Chemical Engineering)	Techno-economic studies
8	Dr. K. Mohanty (Chemical Engineering)	Green Fuels
9	Shri Manoj Majhi (Department of Design)	Sustainability in Product Design and Development
10	Shri A. Goswami (Superintending Engineer (Electrical), Engineering Section)	Energy Audit
11	Shri T. J. Singh (Superintending Engineer (Civil), Engineering Section)	Resource Audit

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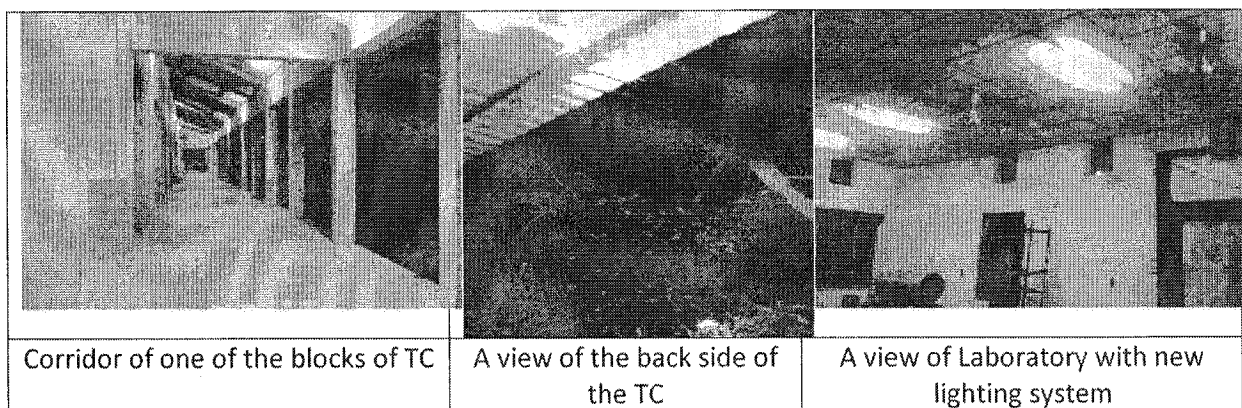
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Green Office
IIT Guwahati

Green Policy and Projection, IIT Guwahati

From inception, the Green Office at IIT Guwahati is interested to implement IIT Guwahati specific sustainable technologies. At IIT Guwahati, emphasis has been strongly towards energy efficiency and Waste minimization and Utilization. This is the major thrust and emphasis in the Green Policy of IIT Guwahati. Further activities planned towards the implementation of Green Policy in the near future and further projections of the same are presented as follows:

1. Demonstration of Biomass to Electricity at Technology Complex

A part of the Technology Complex of IIT Guwahati has been brought under electrification with a biomass to electricity conversion technique since September 2, 2014. An existing laboratory level biomass gasifier has been modified to pilot level by a group of PhD students, namely, Gajanan Shelke, Phuy Phuy Thant and Debarshi Mallick under the tutelage of Prof. Pinakeswar Mahanta (ME) to generate 5 kWe power. Presently, 2.5 kWe power is utilized to provide lights to one laboratory and the corridors of one of the blocks of the Technology Complex. Solid and loose biomass of the campus will be used to produce the green energy.



2. Ongoing Projects

a) Hazardous Collection, Storage and Disposal at IIT Guwahati

- Green Office, IIT Guwahati is registered under Pollution Control Board of Assam (PCBA) as an authorized centre for the collection, storage and disposal of hazardous waste chemicals.
- Green Office has established a hazardous waste policy at IIT Guwahati campus.
- Green Office collects about 3000 L of hazardous waste solvents every year and disposes them to respective vendors at Kolkata for hazardous waste disposal. The vendors are registered under West Bengal Pollution Control Board and carry out distillation to recover usable solvents and incineration to dispose harmful hazardous solvents.
- Green Office has also established contact with vendors at Kolkata to take up hazardous bio-waste. The vendors registered under West Bengal Pollution Control Board adopt incineration procedures to dispose the hazardous bio-waste generated from IIT Guwahati research and teaching activity.

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b) Solar PV based Power Generation (20 kW) for Central Library Building

- In this project, we intend to verify the technical and economic feasibility of Solar PV based power generation for utilization at the Central Library of IIT Guwahati. The project is anticipated to provide significant insights into the very feasibility of Solar PV based electrical power generation technologies for the campus utility requirements. Upon successful venture, the project will enable furthering micromanagement of utility in various Departments and Centres at IIT Guwahati.
- For the project, Notice inviting quotation (NIQ) will be floated soon for the purchase and installation of 20kW solar PV unit.

c) Waste paper recycle project

Green Office, IIT Guwahati has initiated a waste paper recycle initiative. The salient features of the project as follows:

- About 1000 kg of waste papers including printed A4 sheets and disposed answer scripts were collected.
- A vendor has been identified in Guwahati who owns a paper plant. Green Office signed a contract with the vendor.
- A work order will be used soon to the vendor to initiate work on a trail basis. The vendor would carry out shredding, deinking, pulping and regeneration of paper products such as envelopes and notepads. The envelopes and notepads with IITG logo would be received by IIT Guwahati and subsequently used for the office administration.

The project cost is evaluated to be equivalent to the retail cost of the envelopes and notepads procured from various vendors at IIT Guwahati. After an experimental trail for the first batch of 1000 kg waste paper, Green Office wishes to further implement large scale recycle of waste papers by

3. Approved projects

a) Vegetable Waste based Compost Generation to meet Horticulure requirements at IIT Guwahati

Making use of the vegetable waste generated from Hostels, Shopping Complex etc., the Project involves the generation of vermicompost using a batch process. The generated Vermicompost is anticipated to serve as a good source of nutrient for the horticulture related requirements at IIT Guwahati. The project proposal has been approved by the Hon. Director. The project is beneficial from two perspectives namely (a) Generation of good quality organic compost and (b) Driving Awareness in the IITG Community towards intelligent utilization of waste.

4. Project Proposals under Preparation

a) Biogas generation using cooked and uncooked waste at IIT Guwahati

A Ministry of Non-conventional Renewable Energy (MNRE) project proposal is presently under preparation for the generation of biogas from cooked and uncooked waste at IIT Guwahati. The installed plant capacity of 300 kg/day is anticipated to reduce the LPG consumption in the one of the hostels by about 20 – 25%. Further, alternatives for bio-gas process to generate bio-power and

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thereby support air compressor station at IIT Guwahati for the refilling of automobile and bicycle tyres is also anticipated as a follow up of the project proposal. Further, the project could also supplement uncooked and cooked waste generated at various IIT Guwahati residences, guest house and shopping complex. Thereby, further reduction in the waste sent to land fill sites at Guwahati is envisioned, after realization of the project.

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Green Office
IIT Guwahati