

Unnath Bharat Abhiyan



Presented by

**National Institute of Technology Silchar
Assam, India**



Education

- ❑ 6 B.Tech+15 M. Tech+3 MSc + 1 MBA programs
- ❑ Students Strength \approx 3000+ (**Including approx. 268 Ph. D Scholars**)
- ❑ 09 patents and 10 Awards
- ❑ R & D Projects Rs. 650 Lakhs.

- ❑ **NBA accredited under Tier-I : UG-83.33% & PG-35.71%**
 - ❑ NBA expert visit for 5 PG programs is scheduled from 18-20th September,2015

- ❑ Research Promotion Cell (RPC)
- ❑ **Best TEQIP-II performing Institutes in the Country- 100% Utilization within project period/achieved 10 on 10 from NPIU and World bank for satisfactory performance.**
- ❑ **Total FDP/STTP under TEQIP-II: 89**

Striving for excellence

S T R E N G T H

- ❑ NASSCOM – Governing Council Member
- ❑ **Research Park** established with Industries-ETH, TATA Technologies
- ❑ **Best Engineering Institute in NE by ASSOCHEM-*twice in a row***
- ❑ Remote Center under **NMEICT** with IIT B and IIT Kgp. Blended MOOC participation.
- ❑ **Supercomputing facility** in collaboration with CDAC
- ❑ **11th CDAC** Center established at NIT Silchar for entire NE
- ❑ 124 International Students
- ❑ **Imparting education to the school drop outs in the vicinity of NIT Silchar through Gyansagar (A Social Welfare wing of NIT Silchar)**
- ❑ **NIT CIT Certification Programme**
- ❑ **Blended MOOC courses offered**





- ❑ **Indovation Lab (INDian innOVATION)** established to promote innovation and design and research
- ❑ **16 MoUs signed** with industries and academia such as **BARC, ETH, National Instruments, IITG, NIT Meghalaya, NIT Manipur, Powai lab, IITB, CDAC, NASSCOM, TATA technologies, TCS** etc.
- ❑ MoU signed with **University of Illinois, UC**
- ❑ **Supercomputing** facility established
- ❑ **11th CDAC Center** established at NIT Silchar
- ❑ MoU with NRDC for **Innovation Facilitation Center**
- ❑ **80+ Faculty Development Program** : thrust areas in S&T : experts from IISc, IITs, ISI, IEST, NITs, Foreign University



Patents and awards:

- ❑ 09 Patents in ME, CE, Chemistry, E&I.
- ❑ NIT Silchar is awarded with RAJBHASHA SHIELD-2014 by MHRD for best use of HINDI in administrative activities.
- ❑ “Telemedicine Projects on Cancer” in collaboration with C-DAC Mohali bagged two awards at e-Assam Summit recently at Guwahati.
- ❑ NIT Silchar is Awarded “BEST Engineering College in India- EAST” 2015 and 2014 by ASSOCCHEM ...twice in a row
- ❑ IBM SUR award for significant contribution in leadership.



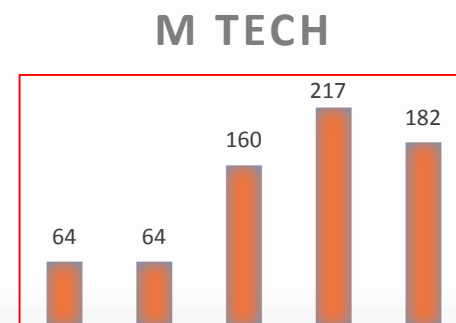
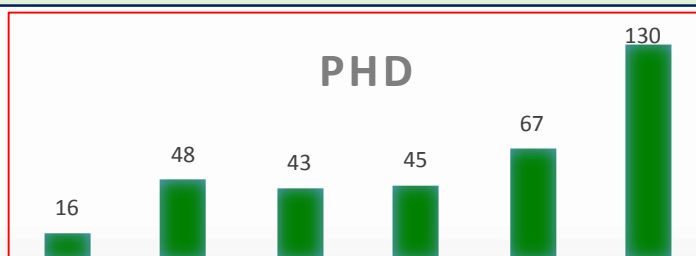
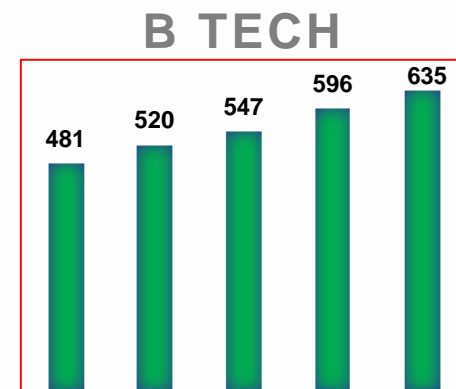
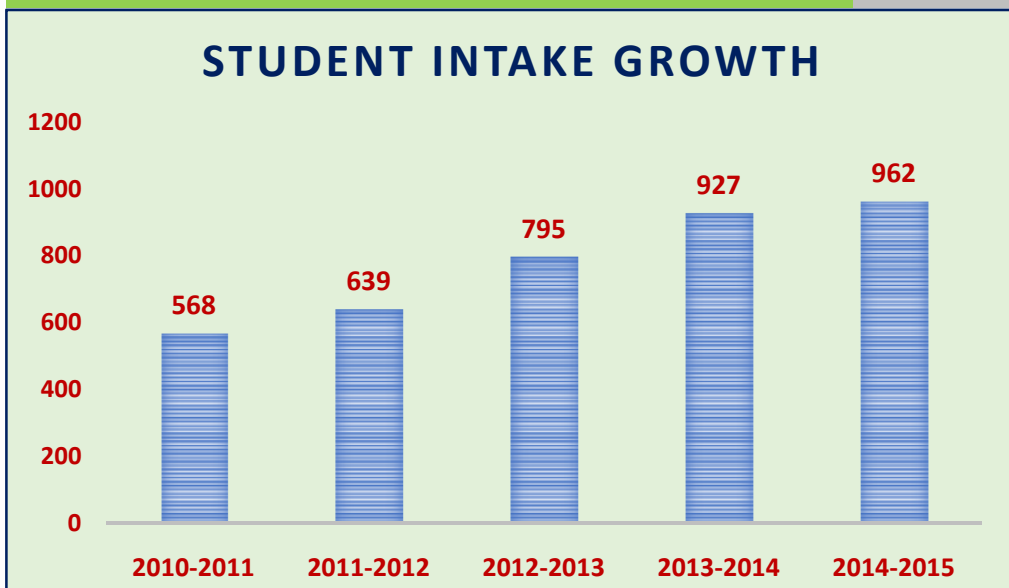
Education

- Supercomputing Center established
- NIT Silchar received 2.2 Cr. DST-FIST in ME on Advance Manufacturing and Material Testing
- Centralized Micromachinng Laboratory
- NABL Laboratory established
- Indovation lab for promoting Innovation and Entrepreneurship



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Education

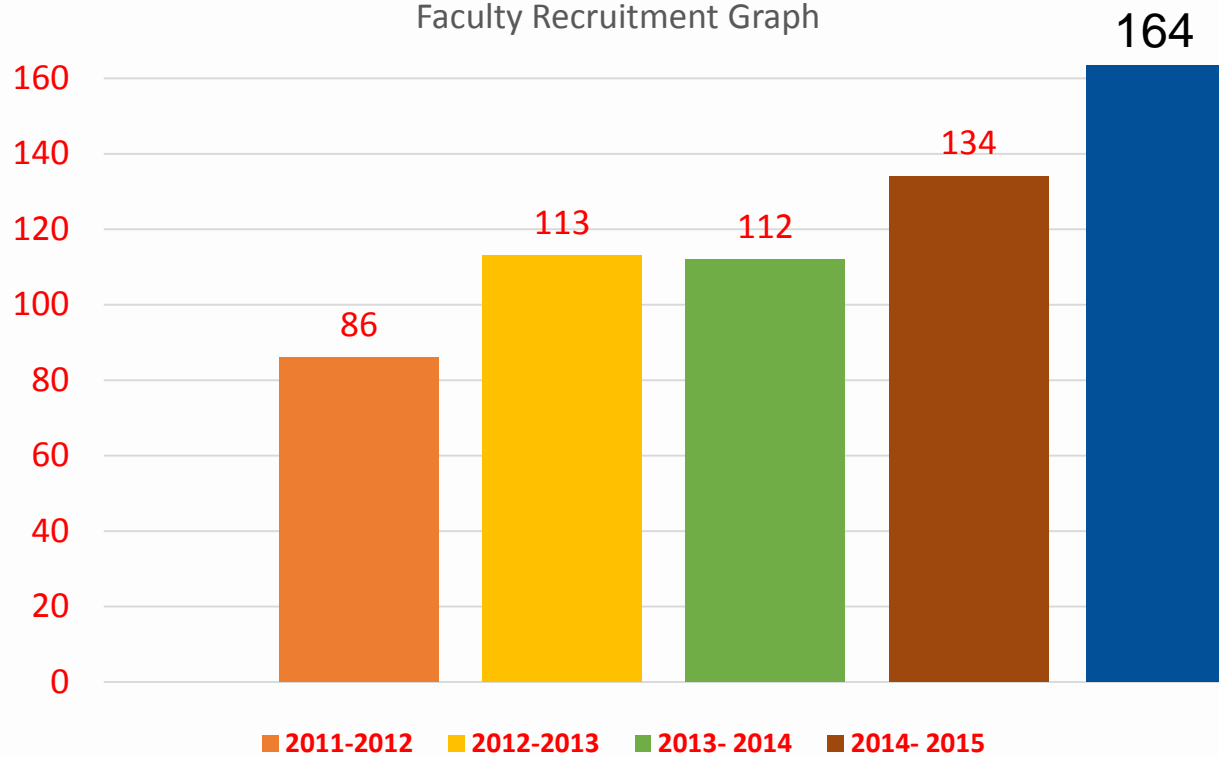




Faculty Strength:

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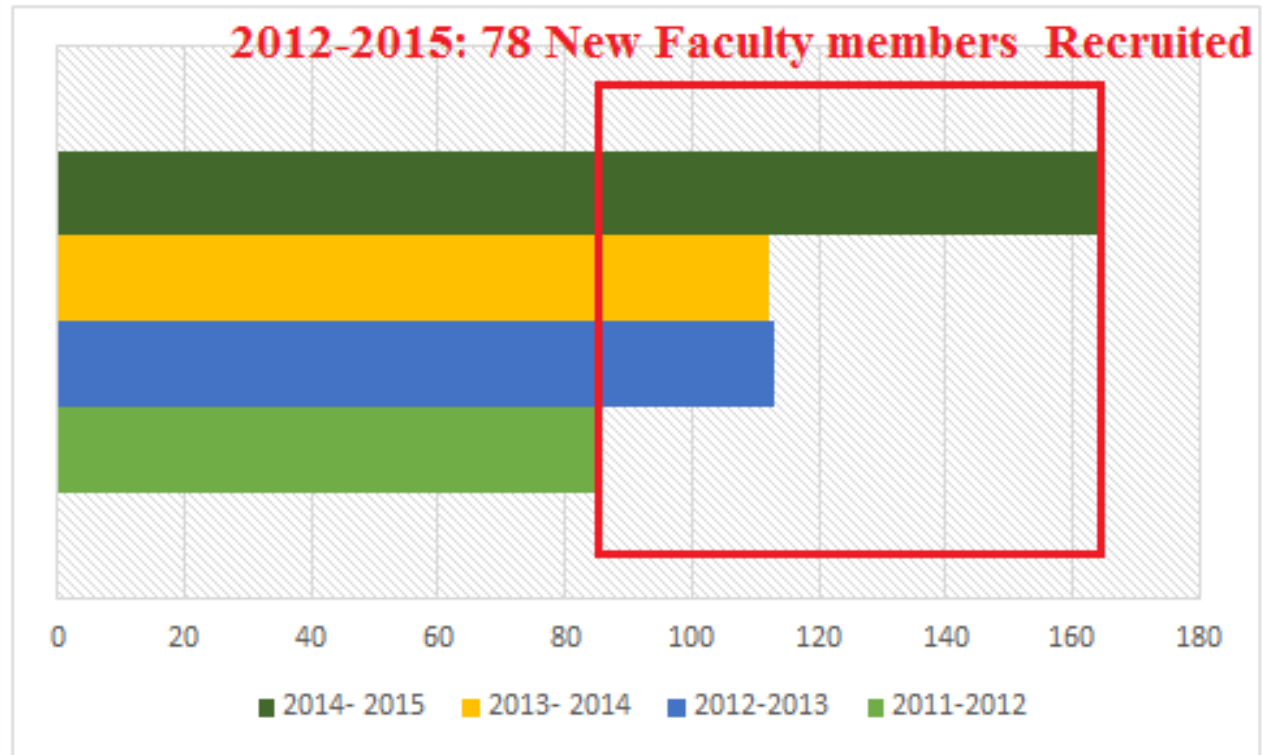
Faculty Recruitment Graph





Faculty Strength Improvement:

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UBA Cell

Dr. Ranjith G. Nair, Coordinator

Co-coordinators

Renewable Energy	: <i>Dr. Arup K. Goswami</i>
Farming, Agricultural Animal Husbandry and Forestry	: <i>Dr. Arun Kumar Sunania</i>
Artisans	: <i>Dr. Soma Panja</i>
Water Resources	: <i>Prof. A. K. Barbhuiya/Prof. P. S. Choudhary</i>
Sanitation	: <i>Dr. Upendra Kumar</i>
Low Cost Housing	: <i>Prof. A. K. Dey</i>
Academia	: <i>Dr. S. R. Mohapathra</i>
Industry	: <i>Dr. Sumit Bhomik</i>
Education & Networking of Institutions	: <i>Dr. T. R. Lenka</i>
Medicine/Health	: <i>Dr. S. S. Dhar</i>

UBA Cell Objectives

Aim: Play a vital role in the overall development of the identified nearby villages

Key objectives

- To promote innovative product development for social needs
- To initiate start-ups and endorse product ideas
- Nurturing creative minds of techies and entrepreneurs
- To be a unique platform where innovation meets design
- Skill development and creation of job through entrepreneurship

Areas of Interest

Solar Energy, Bio Energy, Drinking Water Supply, Handicraft and Artisans, Affordable Housing, Improving Health, Education, IT

Skill Development : GYANSAGAR

NITS-CIT (National Institute of Technology Certificate in Information Technology)



Course Objective:

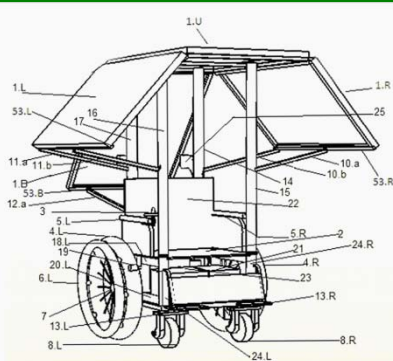
To up skill the rural and unskilled people with basic computer literacy

Course Outcome:

High expectation to enable them finding vocational and entrepreneurship opportunities by observing themselves in indispensable employability.



Renewable Energy : Solar Energy Initiatives



The invention provides a wheelchair with foldable solar panels. It has a pair of side frames which support the foldable and adjustable solar panels each of 80W. Secured to the side frames are a motor drive system, a pair of rear wheels, a pair of castor mounted front wheels, a pair of footrests and a battery support assembly that supports at least one battery. The invention uses 144W motors instead of 320W motors that are prevalent at the moment in the solar powered wheelchairs.

Best Undergraduate Students' Project on Renewable Energy 2013 (3rd Prize Worldwide) by the European Renewable Energy Research Centers (EUREC) Association.

The project 'Solar Powered Wheelchair' was awarded the **Innovative Student Projects Award 2013** (Bachelor's Level) by the Indian National Academy of Engineering

Filed **Patent** for 'Solar Powered Wheelchair' at the India Patent Office :832/KOL/2013 on 12th July 2013

SOLAR POWERED WHEELCHAIR

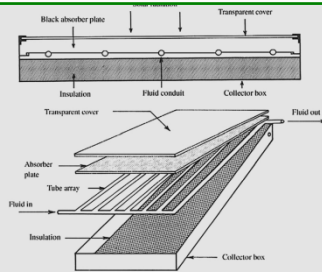


Rohit Thakwani



Subham Jain

SOLAR WATER HEATING SYSTEM



Pictorial views of a flat-plate collector including components

Consists of a collector to collect solar energy and an insulated storage tank to store hot water. The solar energy incident on the absorber panel coated with selected coating transfers the heat to the riser pipes underneath the absorber panel. The water passing through the risers gets heated up and is delivered to the storage tank. The re-circulation of the same water through absorber panel in the collector raises the temperature to 80° C (Max) in a good sunny day. The total system with solar collector, storage tank and pipelines is called SWHS

Life : 15-20 years

Approximate cost: Rs.15000- 20,000 for a 100L per day capacity system



Renewable Energy : Solar Energy Initiatives



**SOLAR BAMBOO
RICKSHAW**

It delivers a properly designed structural design combined with aerodynamics and an elegant aspect to make it representable to the masses. The present invention provides a solar powered rickshaw with foldable solar panels to improve efficiency while the solar rickshaw is immobilized and the material design has been so designed that it reduces the clutter and weight as much as possible by reducing the beams in the vehicle. Special care has been taken to reduce the frontal area of the invention to reduce air drag and improve performance and efficiency. It has a self-built and economic suspension system comprising of dual springs to improve the shock absorbing capability and comfort of the rider along with the onboard electronics and the rechargeable lead acid batteries. It has pedal generator which can be driven by the operator with minimal effort and can be used to charge the rechargeable batteries by a good fraction. Else than that, it has a few more tweaking done like the dynamic braking system to reduce the waste of energy also a few more additions like the onboard 220V AC charging using has been done to ensure the sustainability of the solar rickshaw even at the bad climatic conditions.



Solar DC Fan

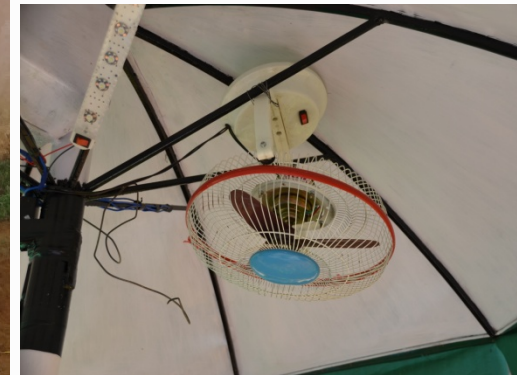


Solar Tree



E-Bikes

Renewable Energy : Solar Energy Initiatives



Solar Securit-E Shed- a new design concept

Renewable Mission : Solar Training for employment

In view of Hon'ble PM's vision and Govt. of India's initiative in Solar Energy-NITS started empowering villagers with training on Solar for employment



Two days skilled development program for Villagers on Solar system at Venture Academy-Indovation lab

Manual in four languages



The aim of the workshop was to strengthen the knowledge & skills of villagers from nearby villages on solar system

Renewable Energy : Bio Gas Initiative

NISARGRUNA BIOGAS PLANT

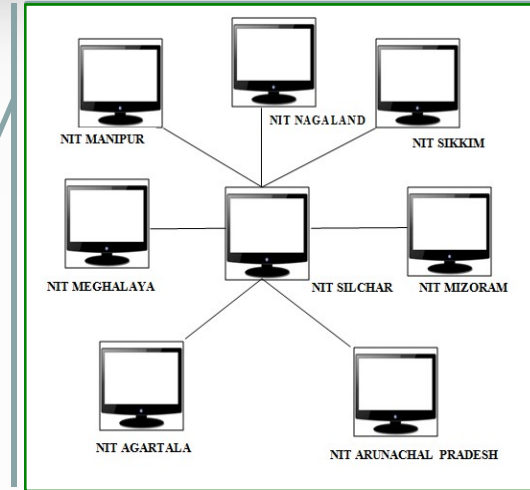
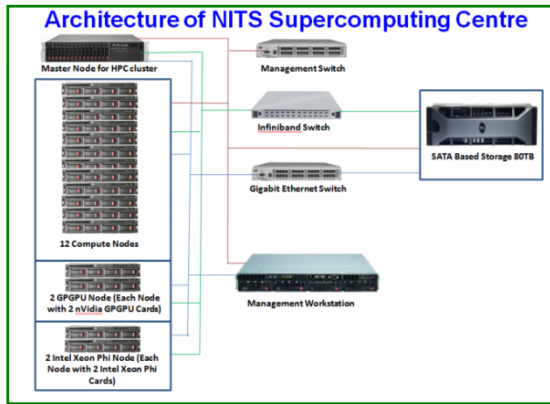
Capacity: 100kg/day



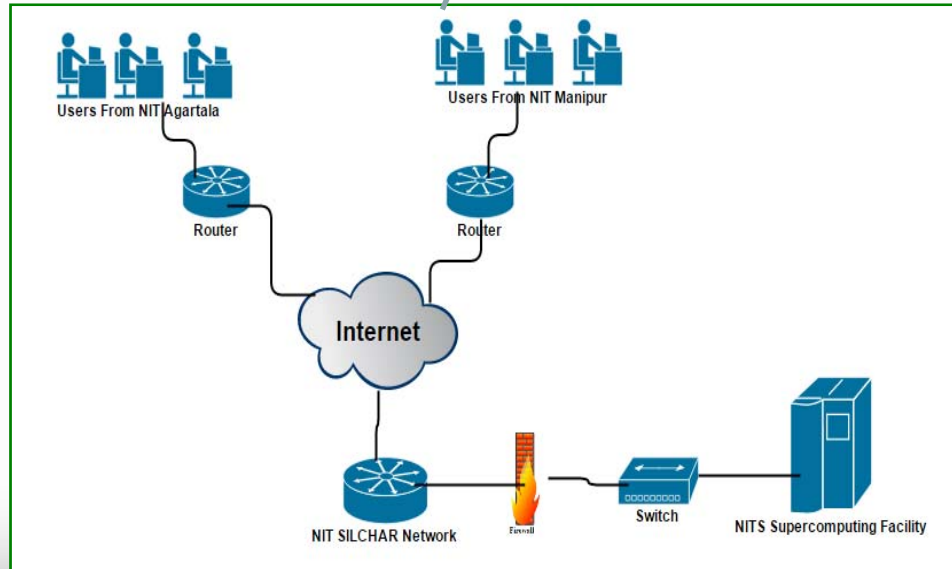
Other Initiatives

Proposed North East e-Connectivity with NITS Supercomputing Centre

Robust backbone connectivity for HPC –supercomputing facility in collaboration with CDAC.



Shri Pranab Mukherjee, Hon'ble President of India at Rashtrapati Bhavan during the Conference with the NIT's Directors held on 29 - 30 Oct', 2014 at New Delhi asked NIT Silchar to be the mentor for e-connectivity in NE.



ICSIT-2015
10-13
March, 2015, Orlando, Florida, USA

Other Initiatives: Low cost Water Purification System

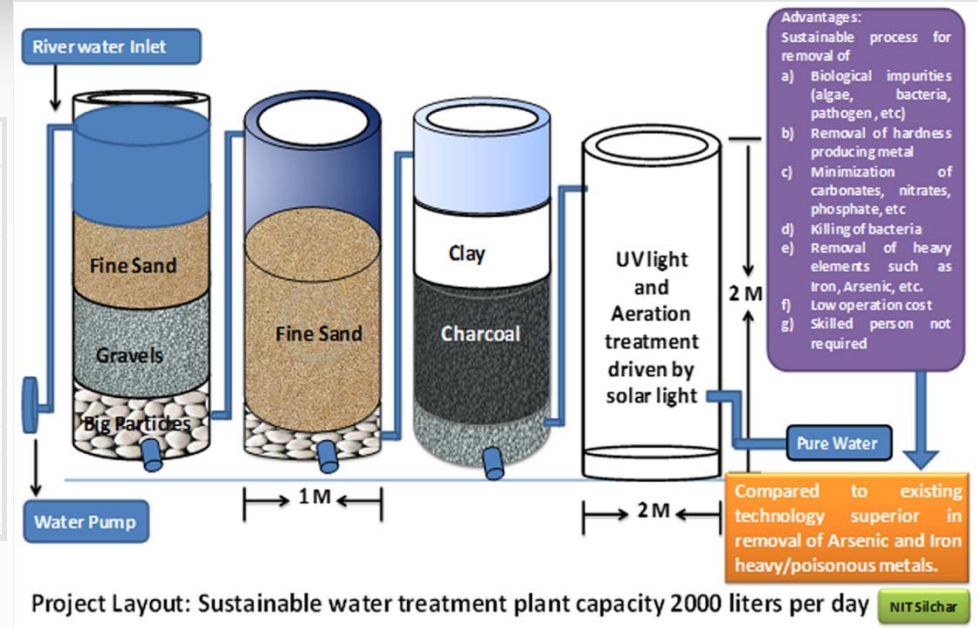
SUSTAINABLE WATER PURIFICATION PLANT

@ MADHUTILLA VILLAGE



Table 1: Raw Water Characteristics (Feb 2015)

Names (Impurity)	Concentration (ppm)	WHO/BIS Norms (ppm)
pH	6.0	6.5-8.3
Ca ⁺⁺	210.0	Total Hardness: 40
Mg ⁺⁺	30.0	
Na ⁺	21.5	
Alkalinity (HCO ₃ ⁻ , CO ₃ ²⁻ , OH ⁻)	340.5	
SO ₄ ⁻	280.5	250
Fe	2.5	0.3
As	0.7	0.01
Turbidity (NTU)	2	0.2
TDS (mg/l)	~550	500



Low Cost Bamboo Storage House for Local Fruits

A NIT Silchar and C-DAC- Mohali collaboration:



To provide specialized health care services to the rural population in Silchar, Assam, C-DAC, Mohali is establishing Telemedicine Consultation Centers (TCC) at NIT Silchar & two villages on a pilot basis.

It is proposed to establish TCC at 3 locations namely

- Cachar Cancer Hospital & Research Centre (specialist node) CCHC,
- Babutilla/Madhutilla
- Tukagram/Bhanga (remote node) at Silchar.

Other Initiatives: Low Cost Housing



**Price: Rs. 38000/-
(10FT X 10FT)**



Initiatives taken under

Rashtriya Avishkar Yojana

Two Schools are identified for Phase-I
Kendriya Vidyalaya, NIT Silchar
Barak High School

First phase :

Development of interactive **3-D models** and shapes for mathematics: problem oriented models

Digital content development and delivery

Tor Fod Jod contest

School Genius Event in Annual technical fest

Idea presentation on Engineers' Day by school kids

Pedagogy for School Teachers on ICT based education

Mentoring for interactive Course Content Development and Laboratory setup.

We are also working on Eshan Uday and Vikash scheme for Silchar.

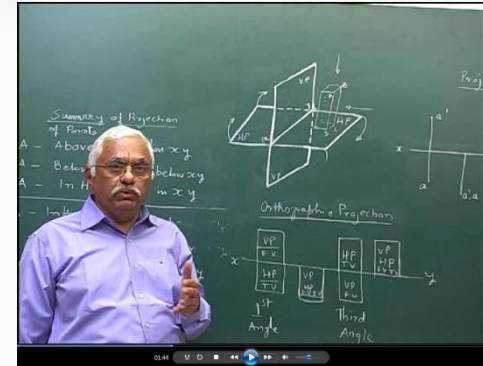
Venture @cademy - Indovation Lab[®]-Video Book

ICT based Video Book on **Technical, Vocational and School** Curriculum for human resource development in North East

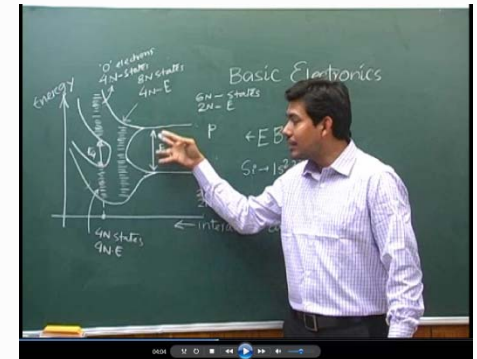
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Development of Video Book for
**Engineering and Technology
Sciences and HSS**

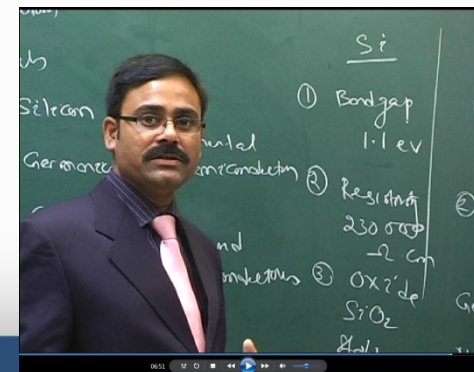


Development of Video book for
**Science, Mathematics and English
for Primary Schools for NE states.**



Development of Video book for
**Vocational Skill Development for
NE region.**

The entire storage will be maintained at
NITS Cloud which will be shared to
institutes as per MoU and requirement.



Project submitting to DeitY

जय हिन्द

THANK YOU
for your attention



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