



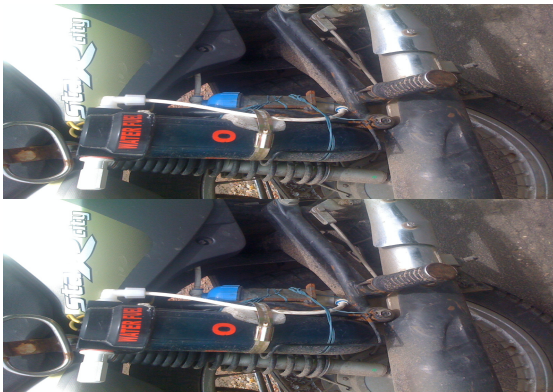
# Gujarat Technological University

## INDUSTRY'S PROBLEMS

solved by

## STUDENTS OF GTU INSTITUTES

Student Mithilesh Patel, from *GOVT. POLYTECHNIC, DAHOD* has successfully designed a module to Run IC engines (vehicular, agricultural pump, generator ext.) with mixed water injection. Though being a student from Civil Engineering has successfully experimented in his bike for approximately 800km in 4.5 month with his so called h2o kit. He claims specialty /unique benefit of his innovation is in improving mileage from 10 to 100% and h.p. 5 to 10%, remove co2 and hc exhaust 70% up. He suggests that his models will be suitable where it can be used in any place like agricultural automobile, medical, welding, cooking, etc.

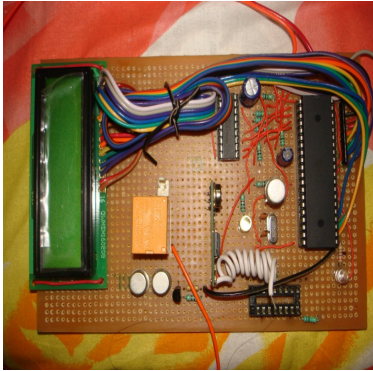


An industry defined project (**IDP**) posed on online platform techpedia.in by Royal Solar, Rajkot has successfully done by a student of AITS, Rajkot which can be used in tribal people's domain due to its low cost. Similarly a team led by Malav Kansara ,a running UG student from Mehshana has successfully attempted in solving "Photo sensor based Sun tracking system for Solar Power Plants" a problem posed by L&T. The attempt is to sense the sun position within 0.1 deg accuracy. For this, the control system designed will continuously change the sensor position till maximum radiation is sensed. This sensor system then can be interfaced with solar reflectors to point them towards the sun.

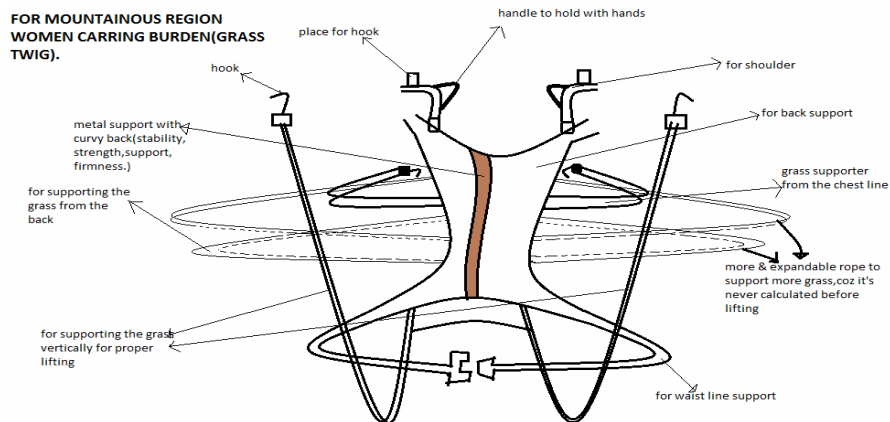


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A group of UG students of GTU including Mr Rashesh Dhare from AITS has cracked a problem posed by again L&T on Infrared sensor based Vehicle Classification System for wider applications. This project has successfully verified by a group of experts at SVNIT Surat early this month. They have got wider applause to go for possible testing it in *BRTS application system in Ahmedabad* in due course of improvements in precession.



Hitesh Rana a final year student of Electronics and communication in ADIT, Karamsad has put his hand on solving many real life **socio technical issues** and adding value to grass root innovations. He has worked in areas like plough for farming on hilly regions, safety helmet for 2 wheeler riders, portable helmets etc. This working process has taken a way ahead in socializing our technologies that have remained unsolved since centuries in common man's life.





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A Student project Guided by Mr Amit Degada on *I-Wikipedia* has progressed significantly involving UG students at VVP Engineering College, Rajkot. The biggest advantage of this project is that everybody is just one click away to the right information and we can connect the pool of the knowledge and people can get immediate solution to their queries. Similar innovative works has been guided by Mr Dhruv Dave, L.J Institute of Technology in areas like *fast Full search Algorithm for motion estimation* and other related soft technologies.

Going way ahead a student of R.K.College of Engg. & Tech in GTU, Amit Siroya has really applied the innovative way to conserve energy. Using the linear motion developed by him from scrap vehicle wiper and a timer linked arrangements he has produced a way for addressing problem of dust cleaning on solar PV modules for solar street lights in remote places and increase the efficiency for this photovoltaic device in longer run (an industry problem posed by one solar industry at techpedia). Many Solar energy companies have appreciated this innovative solution and handful of takers to this are on track especially in saurashtra. He has availed a great deal of mentoring support in furnishing his idea via the mentors from online NMN (National Mentoring Network) of [techpedia.in](http://techpedia.in). from other colleges of GTU.

In few cases students have gone one step ahead in converting their UG projects for their new techno entrepreneurship modules. A UG students from Surat has successfully created innovative green lighting system as a pre final year project and now successfully converted it as profitable techno-entrepreneurship module namely "*Angadia Enterprise*".*The students have successfully used the lab infrastructures after college hours and started their ventures right from the labs to significant market presence now and they are yet to pass out from their UG courses.* This is motivating a wider range of UG, GTU students to think out of box now and link *idea, innovation to industrial needs.*

A Great number of Faculties from GTU have been helping the students at various places in guiding their dreams via online NMN (**National Mentoring Network**) as an open knowledge pooling linkages breaking the barrier of space and time. To carter the need of assisting the students in developing their ideas to prototypes ,techpedia is looking forward for creating a micro venture innovation funding system (MVIF) to help these students in shaping their models in ripple funding manner with respect to raise innovation quotient periodically. It can improve to a better '**idea-innovation-solution-enterprise modules**' algorithm in converting students work to fruitful socially applicable technical outcomes than the existing situation.

**LET'S POOL OUR SPIRIT AND RESOURCES IN CONVERTING THE EXPERIMENT OF  
TODAY TO BE THE HYPOTHESIS OF TOMORROW.**

# EFFORTS IN LINKING THE TECHNICAL STUDENTS/FACULTIES OF GTU TO MSME TECHNICAL ISSUES

## BY GTU AND TECHPEDIA AGENDA

**Breaking barriers between “Industries – Academia”  
Endorsing innovation fuelled Techno-entrepreneurship  
Commandeering break-through solutions for Industries and Society.  
Pioneering Open innovation and harvesting need based technological evolution**

**Techpedia.in** ( [www.techpedia.in](http://www.techpedia.in) ) as a national platform for bridging the gap existing between *Industries, Academics and Innovation* is trying to develop possible linkages between the esteemed academic domain of GTU and MSME clusters of the state. The novel mission initiated in mid-2009 and within a span of just few months it has been able to amass an exhaustive database of more than 100,000 technical projects and write-ups from more than 500 technical colleges (AICTE approved) across the country, including IITs and NITs. Recently concluded NIT consortium’s meeting of its Deans at NIT Surathkal on April 3rd this year has liked the concept to take it ahead with further pace preserving all value.

Every year approximately 6 lac students graduate out of technical colleges in India and as per the norms set by AICTE, 1.25 lac projects prepared by the students and guided by the faculty are submitted to the college authorities. It is sad but true that no one knows about the fate of these projects and their usability in industries. As noted by former director general of CSIR, Padmabhusan Dr R.A.Mashelkar on Techpedia recently that over 3 million human months of our Yuvashakti being spent on solving real life problems here in college campus. For the first time, techpedia have an access to the magnificent outcome of this great endeavor. Techpedia believe in transforming ideas into products and products to techno-entrepreneurship modules keeping IPR linked to the innovators.

If out of these 1.25 lac projects which are submitted every year, **even 1000 (1%)** have the potential to be developed into commercial products or solutions that could provide breakthroughs in the fields of Science and Technology, it could be a phenomenal success in itself. Techpedia is in process of transforming the prevailing environment into a system which harvests technology based entrepreneurship and innovation, and at the same having a transparent system for protection and transfer of the due credentials to the innovators and contributors of the idea till it is transformed into a product. The technical students addresses the IDPs ([http://www.techpedia.in/problem\\_search\\_details.php?problem\\_type=I](http://www.techpedia.in/problem_search_details.php?problem_type=I)) posed by industries and management students address modules similar to developing ERPs to raise the sick units of SMEs and others and new student developed Enterprises.

An **NMN (National Mentoring Network)** <http://www.techpedia.in/nmn/> is being developed to guide these students and faculties to address the industry projected problems/projects(IDPs) consisting of retired scientists, policy makers, faculties and expert professionals from all corners of industry and academics headed by Dr.R.A.Mashelkar.Multiple student and faculty groups irrespective of time and space attempt these problems via the web and lead a relay model in developing faster solutions saving the major R&D investments of many industries as an **open innovation virtual Lab**.

Techpedia database has an exhaustive collection of more than 100,000 technical projects but that accounts for only 4-5% of the total extractable data across all the technical colleges in the country. By accumulating all these it is felt that one can provide a better interfacing for the SMEs to get an idea of real research trend in the UG level even. The effective solutions can be linked to corresponding SMEs keeping the IPR intact to the search students and faculties.Techpedia is trying to develop smaller enterprise units based on technology inputs in developing a wider knowledge society globally. The socio-technical problems of 50 most backward districts are being posed to these students to be taken up in July 2011 with the hope that the problems that have remained unsolved for centuries could be cracked. We are trying to create a collaborative

culture and virtual knowledge network, by which India can harness the full potential of young technological, legal and management minds in an integrated approach.

Techpedia is aiming for **benchmarking, certification, codification and replication** for creating market and learning opportunities at very bottom level too. There are lot of traditional skills which with some improvement or blending of new skills, resources or designs can create opportunities for employment and poverty alleviation. There are also new skills required to be incorporated in polytechnics, ITIs, community colleges, etc., so that local resources are linked with either existing or new skills such that viable markets can be created for skills as well as skill-based enterprises Many chambers and industrial bodies like ASSOCHAM, GCCI, GIDC and MIDC have helped initially to locate the IDPs (Industry Defined Projects) and channelize them to technical students and faculties via a section called “ **problems in search for solutions**” at [www.techpedia.in](http://www.techpedia.in).

*To execute the entire algorithm techpedia team has started visiting the GTU colleges to interact its pre final and final year students and faculties guiding them. The following are few of the notable outcomes found out soon after the 1<sup>st</sup> round of visits to some 2 dozen colleges of GTU. The fact that has been found in this interaction with thousands of students and faculties is that there can be a well trusted link possible between the MSME and academia, specially GTU .Students have successfully attempted the Industry Defined Projects (IDPs) posed by various MSMEs, Bigger Industries and even by Grass root Innovations. Few students have converted their projects work to new enterprise modules in last few months and they are really scaling up towards the effort in socializing technologies. If a little resource could be provided to the students a handful of students can convert their theoretical ideas to prototypes from where a better visibility of the innovation can be created. Techpedia found out from initial GTU college survey that nearly 25% more students will finish their prototypes within UG if they can be linked a very minimum resource. Highly experienced faculties can explore in sharing their expertise beyond their own institutes to link the needy students across the country via web based NMN which is an open source environment in strengthening the knowledge ecosystem breaking the barrier of space and time. A virtual incubation cell centralized at GTU can play a vital role in nurturing the budding techno- entrepreneurs of the technical domain even in UG level.*