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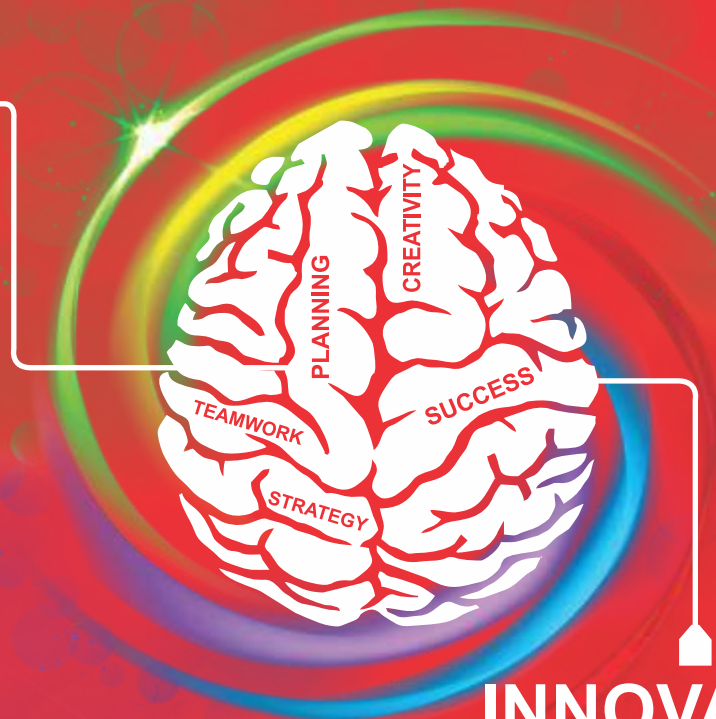


MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES  
GOVERNMENT OF INDIA



**NASHIK INDUSTRIES & MANUFACTURERS' ASSOCIATION**

STUDENTS



**INNOVATION**

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# SME LIVE PROJECTS BY ACADEMIA

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A BOOKLET OF STUDENTS PROJECTS 2019,  
NASHIK

SUPPORTED BY



**TATA**

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## Published By:



**NASHIK INDUSTRIES &  
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**July 2019**

## Responsible

**Mr. Shrikant Bachhav**

Coordinator NIMA Innovation Facilitation Cell



**SIEM**

INDUSTRY CELL COORDINATOR : Dr. KISHOR BHADANE

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# Student Innovation Project

## Project Title

Automatic Printing of Batch Number on Sticker Paper

## Project Outcome/ Impact on SME's

Automatic printing of batch number is easily possible in all kinds of Manufacturing and packaging Industries

### Before

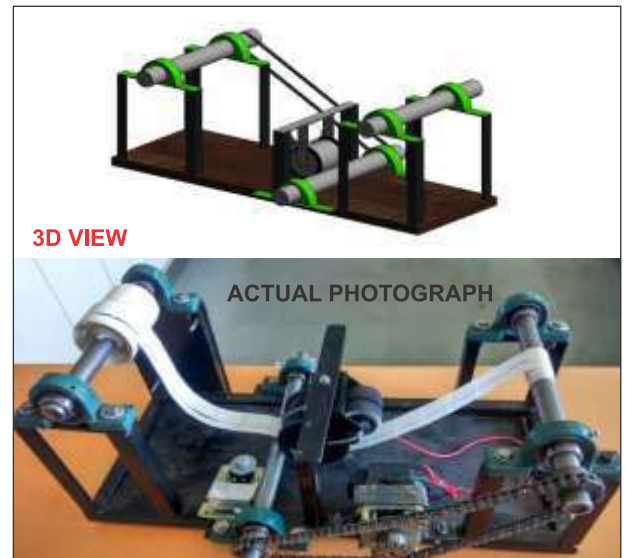


#### Description:

printing labels with batch number and packaging date according to Indian standard batch no. is mandatory on each product. commercially available printers are overpriced. Logistics process is hampered due to total man-hours and manpower. Issues identified are;

- Manually printing Label with batch numbers and packing date.
- More time consuming with higher man hours (Time required to print Label per sticker with details is approx. 20 sec).

### After



3D VIEW

ACTUAL PHOTOGRAPH

#### Description:

- One-time data feeding for particular product and batch.
- Maximum no. of stickers can be stamped within less time.
- Total man-hours and manpower is reduced. Less maintenance.
- When paper roll finished machine will be automatically stopped.
- It is dynamic in which we can change the alphanumeric letters as per our requirement instead of changing complete rubber groove.
- Flexibility of changing even single character.
- Manual operation using handle is also facilitated to save the electricity.



**Neha Kotawar**  
Gagan Enterprises

#### Project Team:

Prof. Y. R. Risodkar

• Prashant Takate

• Sapekesh Ahirrao

• Karan Asaw

# Student Innovation Project

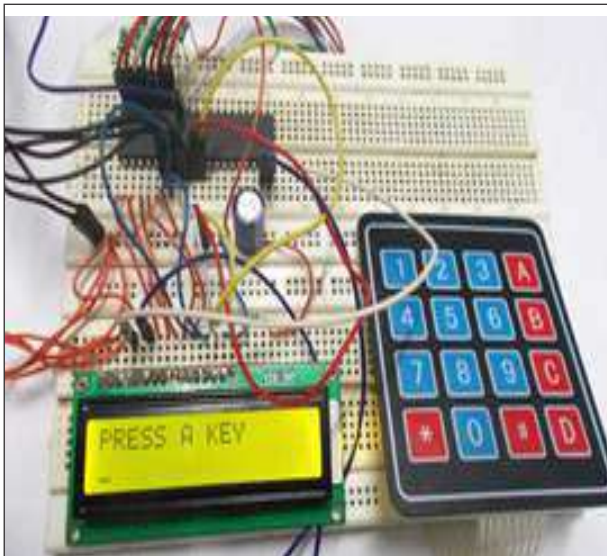
## Project Title

Keypad Testing Machine

## Project Outcome/ Impact on SME's

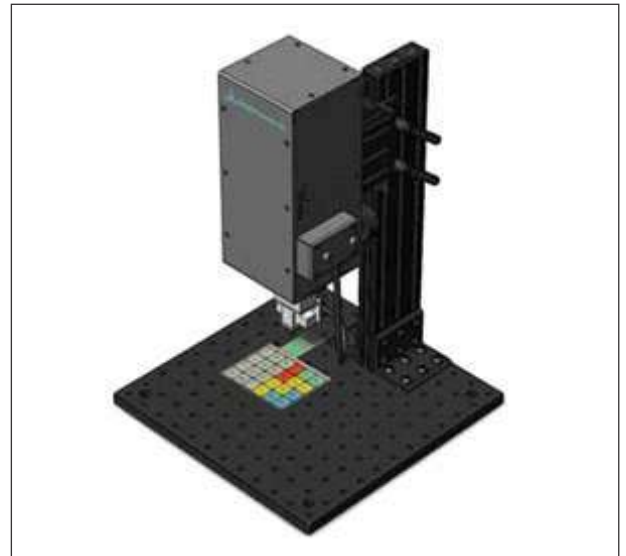
Keyboard testing in semiautomatic way will be able to save the time of testing the large number of keyboards in less time. Error in testing can be completely minimized

### Before



**FORMULATION**–Keypad manufacturing industries are checking individual single key by person and it is too much time consuming. Less number of keys will be tested in a target period. Hence provide to solution to this problem by developing auto-machine that will automatically check the working of a key and record the number of keys to be tested.

### After



we made a kit for testing keypad. This kit is working as semi-automatically the input is given by person to kit, that person describes the number of buttons to be tested on keypad. Then internally working controller work on input which is given by person and if in keypad no errors occur then display will display the 'O.K.' signal or if error occurs display show error on display and buzzer will sound



**Nilesh Joshi**  
Rangvishwa Enterprises, Nashik  
**Industry Feedback :**  
We are happy with the results.

### Project Team:

Dr. Kishor V. Bhadane

● Kapilil Salve

● Nikhil Sancheti

● Kunal Chaudhari

# Student Innovation Project

## Project Title

To implement Coolant System on conventional Lathe Machine

## Project Outcome/ Impact on SME's

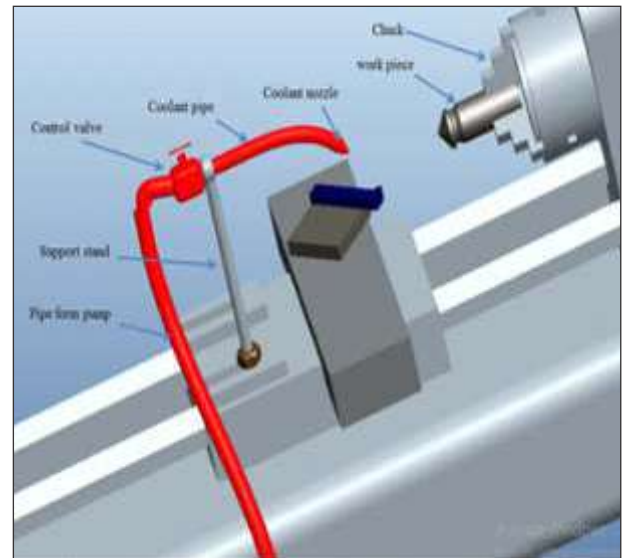
By implementing this system operator can work efficiently as his one hand is free for other machine operation.

### Before



This coolant application process is manual so majority of the coolant is spread unevenly or at undesired places resulting in wastage and it slowing down the process.

### After



Spreading the coolant on the tool tip with help of pump and nozzle arrangement and recirculating the coolant.



**Mr. Rushikesh Umarjekar**  
Varad Enterprises

#### Industry Feedback:

We are using this system from last two weeks and we have seen much improvement in production as machine operator can focus on production and coolant is evenly spread across part.

#### Project Team:

Prof. S. J. Chede

● Rachna Ekhande

● Abhijit Bankar

● Nikhil Sawarkar

● Mayur Varade

# Student Innovation Project

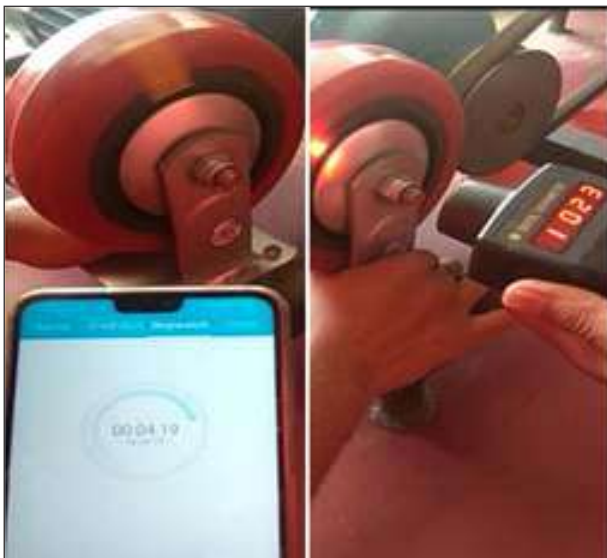
## Project Title

To provide solution to reduce the friction of trolley wheel

## Project Outcome/ Impact on SME's

The friction is reduces in the PU wheels as compared with previous manufactured PU wheels. So the efforts required will be less to displace from one place to another.

### Before



#### Description:

The rotational speed of trolley wheels we measured as 1023rpm by contactless tachometer and disintegrated the contact between them. The total time is measured until the rotation of pulley wheel stop, i.e. 4.19 sec

### After



#### Description:

After few internal modification and improvement in lubrication. The rotational speed of trolley wheels we measured as 1032rpm by contactless tachometer and disintegrated the contact between them. The total time is measured until the rotation of pulley wheel stop, i.e. 1min 34sec.



**Mr. Rushikesh Umarjekar**  
Varad Enterprises

#### Industry Feedback:

We are totally satisfied with the improvements made by Professors and Students. Our business impact of this improvement will be informed soon based on our trials with the customers.

### Project Team:

Prof. Dr. A.S. Dube

● Singh Abhimanyu A.

● Biswas Samit S.

● Makani Tejas H.

● Prasad Nikhil

# Student Innovation Project

## Project Title

Stairs free material handling trolley

## Project Outcome/ Impact on SME's

It can reduce human efforts and increase the work efficiency as well as it increase production rate. Due to it's easy handling it does not required any expertise person.

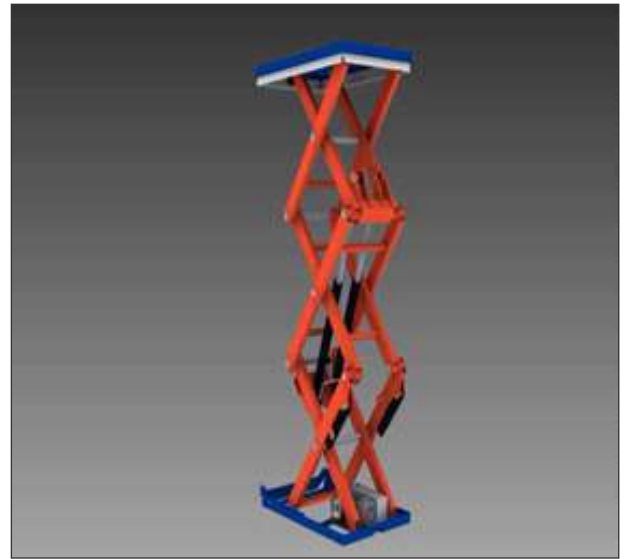
### Before



#### Description:

Goods are transported manually  
Time consuming for transportation of material  
Ground floor get disturbs

### After



#### Description:

Goods are transported with help of trolley.  
Less time consuming during transportation.  
No disturbances occurs at ground floor.



**Neha Kotawar**  
Gagan Enterprises

#### Project Team:

Prof Dr. L.N.Toke

- Vishwadip. R. Pawar
- Avinash H. Shimpi
- Nikhil S. Pawar
- Kiran P. Jadhav
- Siddhant Pawar

# Student Innovation Project

## Project Title

Static Bypass System For Multi-UPS System

## Project Outcome/ Impact on SME's

1. Interruption of supply will be continuously monitored, as a fault occurs on the main UPS system will immediately isolate the faulty UPS and bring another UPS in service.
2. Improve the reliability of supply to critically important loads.

### Before



#### Description:

1. Delay in switching between UPS to UPS was interrupted supply to the server.
2. Manual switching was unable to prevent delay in switching.
3. Fault in UPS was disturbing the reliability of supply to the server.

### After



#### Description:

1. Now there will be no delay in switching between UPS to UPS, thus improving the reliability of supply to the server.
  2. Automatic switching between UPS to UPS is possible without human operation.
  3. Fault in UPS can be easily detected and isolated by our newly developed system of static switching.
- Industry Feedback:



#### Gajendra Chopde

S P Electronics

#### Industry Feedback:

Project done by student is good and satisfied the condition which required for this project.

#### Project Team:

Dr. K. V. Bhadane

● Ruturaj K. Khalkar

● Sujit P. Gangurde

● Akash Sarode



# Student Innovation Project

## Project Title

Smart Industrial Oven

## Project Outcome/ Impact on SME's

This project is directly speed up our operations and indirectly saved our energy cost.

### Before



#### Description:

In a oven as there was no such provision of timer and temperature controller due to which the temperature was rising up to the required temperature but it started dropped down to the set point. Also there was problem of over baked or under baked due to manual stop watch and special attention has to be given to system, hence there was wastage of energy and time. In previous system no system was available for data storage and back up.

### After



#### Description:

- 1.As we have provided the Temperature Controller and Timer the temperature rises step by step and brought to set point and we can be stable it at the required temperature.
- 2.As an alarm and timer is provided which will notify on reaching set point temperature so no issue of over baked or under baked and also no need to give an attention to it. Hence no wastage of energy and time.
- 3.In current system data storage and back up is possible.



#### Nilesh Joshi

Rangvishwa Enterprises, Nashik

#### Industry Feedback :

We are satisfied with the quick response of students for this project. They successfully made working system as per our requirement.

#### Project Team:

Prof. N. L. BHIRUD

● Rudra Mitkari

● Sunny Bhagwat

● Mayur Wagh

● Dhananjay Shirsat

# Student Innovation Project

## Project Title

Intelligent Toilet

## Project Outcome/ Impact on SME's

Once you have used the toilet, it will automatically flush the toilet and also auto floor cleaning. Intelligent toilets have automated flushing system, self-cleaning mechanisms which prevent co-existence of bacteria and viruses.

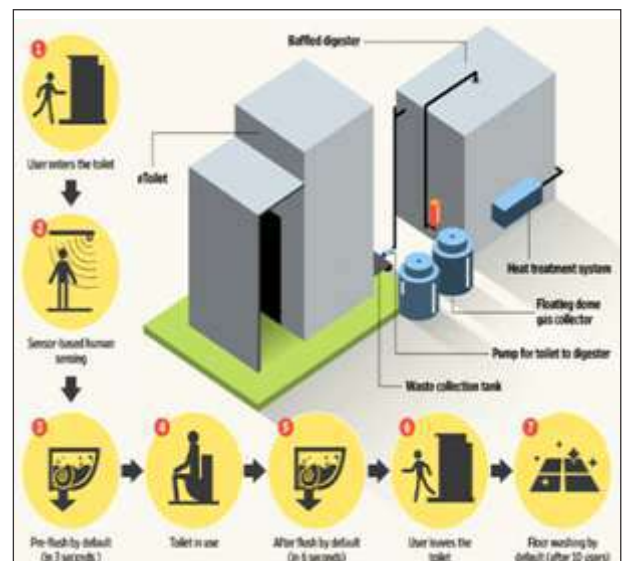
### Before



#### Description:

: Indian Industrial Toilets are not well maintained in SME. So there is big need of Autoamtion system to clean this area. This solution is developed for Railways and Public Places. They are very costly and complete new installation system. We need retrofit solution which make

### After



#### Description:

Toilet will be cleaned automatically. Labour cost of clean toilet is saved. If product pass all test we are going to commercialize this solution.



**Prashant Gatkal**  
GM Designs

#### Industry Feedback:

Student has Developed prototype of toilet cleaning system which can be retrofit in existing industrial toilets. They need to work on electronics and Authentication system.

#### Project Team:

Dr. Hari Prasad

● Aniket Bombale

● Pravin Landge

● Saurabh Badakh

# Student Innovation Project

## Project Title

Inventory and Stock Management System Software.

## Project Outcome/ Impact on SME's

- 1.Improved inventory management.
- 2.Has reduced the manual work and time constraints.

## Before



### Description:

The record of product is maintained manually using handwritten sheets. So at the time of next order of that same product the stored product in stock need to be utilized. So the calculation of that stock and new order is quite complicated and for manufacturing process. Some time that stored product get expired and gets converted into waste and hence, the industry suffers from the losses. So we need to avoid that wastage of product as well as the time.

## After



### Description:

We have developed a system which reduces the manual work. The new system overcomes the time constraint. It becomes easy to find the product details with the help of the inventory management system. It simplifies the process of placing the order, confirming it and viewing the order details. The major problem that is the instock products according to their expiry are notified to the user of the system so that he utilizes the product in stock. Thus, we have come up with a solution which solved all the constraints of the manual inventory product management of Gagan Enterprise.



**Neha Kotawar**  
Gagan Enterprises  
Industry Feedback:

The team has crated a efficient software which is completely useful for my industry. But in addition we require to that Mobile application and a web platform so I can monitor system remotely.

## Project Team:

Prof. P. M. Deasi

● Sagar Bhalerao

● Akshay Mangude

● Vishal Jadhav

● Pooja Askj

● Mrudula Kulkarni

# Student Innovation Project

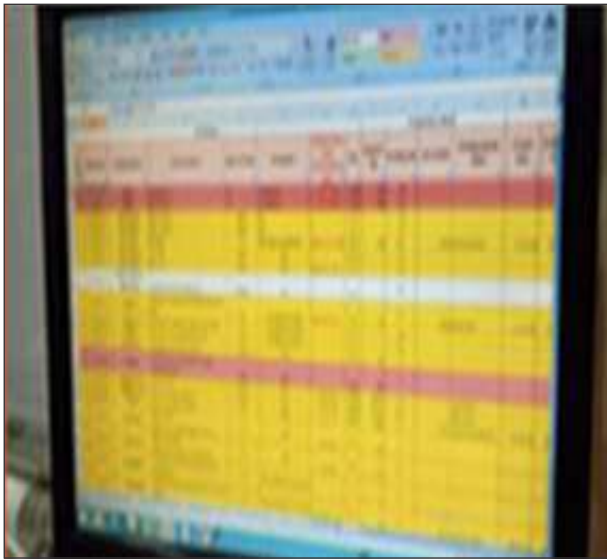
## Project Title

PO Tracker.

## Project Outcome/ Impact on SME's

- 1.Improved PO Tracking Management System.
- 2.Has reduced the manual work and time constraints.
3. Every department will update their status on their own.

## Before



Most of activity is monitored and updated manually by single operator. Every time updated file is shared with Owner. No alerts or timelines monitoring performed by departmental level.

## After



We have developed a system which reduces the manual work. Every department will update status by Tablets installed in their department. This will notify the manger and owner in real time. Most of data entry work is reduced. Now one manager is free to perform other activity.



**Nilesh Joshi**  
Rangvishwa Enterprises, Nashik  
Industry Feedback :

We are satisfied with the Software developed by the students.

## Project Team:

Prof. Anil G. Patil

● Knashil Purkar

● Sumit Borse

● Harsh Singhal

● Ankita Waghadkar

● Riya Saha



**SIEM**  
INDUSTRY CELL COORDINATOR : Dr. KISHOR BHADANE



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