

# Vigyan Ashram Status Report

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- Field testing of Solar UV filter workshop with Mukhai School students
- Faculty development program and Women Entrepreneurship Development Program
- 14 Agriculture Engineering students joined for internship

### **A] Composting of wet garbage at Rajgurunagar town Corporation**

We have decided to demonstrate our composting system at Rajgurunagar dumping site with the help of local environment social activist Dr.Bichkar. We had series of meeting at Rajgurunagar with Govt officials and social activists. We have decided to demonstrate composter system on wet garbage collected from 50 families (approx.. 50kg per day). We have deployed our composter mixer, compost stacking rack system at Rajgurunagar in this month.



Agri engineering intern Mr.Shrikant Dudhane and Mr.Mahesh Shinde were visiting Rajgurunagar every day and processing 50kg of garbage. Trial clearly shows that there is no odor or foul smell from the processed garbage as compared to the other dumped waste. We have also put windrows compost bed for biodegradable wet waste at Aarya school. We have used BARC culture on it.

Both trials aims at developing methodology for effective composting bio-waste at dumping ground by using composter & windrow method. We have collected data about application of compost culture (microbial consortium), shredding, loading capacity etc during the trial.

After successful demonstration, we have given detailed proposal to officials for adoption of the system.

Trials updates can be found on link – [Modification of Staking rack and Trails on Society Composter for 50 Households at Rajgurunagar Nagarparishad. | DESIGN INNOVATION CENTER \(vigyanashram.blog\)](https://www.vigyanashram.blog/2022/02/14/modification-of-staking-rack-and-trails-on-society-composter-for-50-households-at-rajgurunagar-nagarparishad/)

### **B] Agriculture Engineering Internship**

14 students from Agricultural B.Tech college joined VA for their 6 months 'summer internship' program. They are from colleges in Karad, Akluj and warana. They have renewable energy, Soil conservation, Irrigation systems as specialization. They are working on different assignments and projects.

### C] Solar UV water filter making workshop @ Mukhai school

We wanted to field test 'UV Solar water filter' developed by us. We have decided to test these filters on nomadic camp. A training workshop on 'solar portable UV water filter making' was conducted at school for nomadic children at Mukhai school on 25<sup>th</sup> February. The workshop was attended by 9 students belonging to nomadic community. These students & their parent often face issue of unsafe drinking water. Workshop helped student to understand principles behind water purification. They learnt to assemble one solar water filter using UV light for themselves! Students enjoyed the workshop & promised to give feedback on solar UV filters applicability in their locality. We are thankful to La-foundation for financial assistance to workshop under 'Fab-school' project.



### D] Update of Technology based Entrepreneurship Development

#### i) Faculty Development Program (FDP) on Entrepreneurship

FDP on entrepreneurship was conducted for staff of Sanjivani College of Engineering (Kopergaon). Its was 1 week duration (14<sup>th</sup> to 18<sup>th</sup> February) training with interactive sessions on entrepreneur traits, design thinking approach, selecting business idea, prototyping etc. Total 58 faculty participated in the training. Training was online but participants were asked to work on various group discussions/ assignments and presentation during the workshop.

ii) 'Entrepreneurship Development for Woman Empowerment' (2<sup>nd</sup> batch) was conducted at Navilliam village (Panaji, Goa) during 16<sup>th</sup> to 19<sup>th</sup> February in collaboration with 'Vanarai'. The 4 days training included classroom & field sessions on identification of business opportunities, market survey, business modelling etc. Training was attended by 28 WSHG participants from nearby 5-6 villages. Mr. Sachin Punekar and Mr. Yogesh Onkar conducted various session & guided the participants.



Women EDP @ Goa

iii) Mr. Vaibhav Jagtap completed 3 days training workshop on 'cattle feed management' during 31<sup>st</sup> January to 2<sup>nd</sup> February. Mr. Vaibhav is a dairy farmers & field coordinator for 'Vanarai-cattle improvement' program at Sangamner. He learnt practical aspects of cattle feed management like Total Digestive Nutrient (TDN), feed nutrient management (protein/ energy balance), Feed Conversion Ratio (FCR), fodder treatment, azolla etc through hands-on sessions.

iv) Yogesh visited Bhalyachiwadi (Tal-Karjat, Dist-Raigad) @ 23<sup>th</sup> February to conduct field survey for designing EDP training for tribal beneficiaries in collaboration with Anubhav Pratishthan.

v) On-field technical & management assistance provided to Morya bakery (Pimpalgaon Ghode), Aaba Goat farm (Chichbaiwadi) and Hariom Dairy (Shirwal).

vi) A enterprise registration support provided to 5 individual budding enterprise (Udyam Aadhar- 2, FSSAI -2, Shop Act-1)

## **Hero of the month:**

- Mr. Anish Thakare: Anish has started his bakery enterprise in the name of 'Suha Bakery' at Sangamner, Dist.-Ahmadnagar. Anish is our EDP-bakery training beneficiary (November 2022 batch) and receiving business registration, mentoring support etc support from past 3 months. through EDP program.
- Mr. Manesh Tathe: Mahesh has started a business of welding-fabrication in the name of "Nanaji Industries" at Mukhai, Shirur. Manish has learnt fabrication skills through various internships assignments and presently getting support on business registration, accounts management, advertisement etc.



## **E] Design Innovation Centre (DIC) update:**

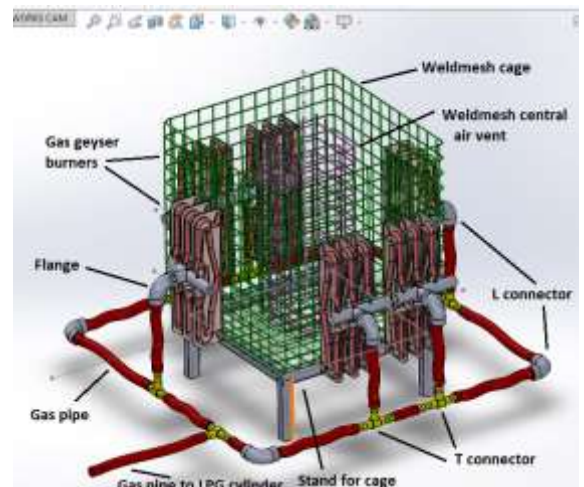
### **i] Technical Session @ ICAR winter school:**

Ranajeet conducted two sessions at ICAR [Indian Council of Agriculture Research] winter school @ College of Agricultural Engineering and Technology, Dapoli on 25<sup>th</sup> February. Winter schools is capacity building program for researchers/subject matter specialist under ICAR institute. The theme of the program was 'Renewable Energy Technology for Agriculture sector & Rural industries. Ranajeet conducted two sessions on 'Energy self-sufficiency & entrepreneurship opportunity in renewable energy- a Vigyan Ashram approach' and 'Application of solar photovoltaic & Artificial Intelligence (AI) technology for protected cultivation farming- review of experiment done at Vigyan Ashram'. He shared various projects and experimentation done at Pabal campus on implementation of renewable energy. Ranajeet and Prasad also conducted session on 'Design innovation center' for Agri Engineering students on 26<sup>th</sup> Feb.



**Ranajeet presenting @ ICAR winter school**

**ii] Development of Sanitary Pad Incinerator for hostels:** Purnesh, Vrishabh & Ghansham completed CAD modeling for LPG based sanitary pad incinerator (50 pads/ batch). This incinerator will have central furnace with vertical mounted LPG burners & air duct (chimani). A lab trial successfully conducted for first working prototype & successfully conducted its trial with mechanical controls.



**CAD model of incinerator**

**iii] PID controller for egg incubator:** Prathmesh is working on developing temperature & humidity sensing system for 100 to 500 egg capacity poultry egg incubators. He is developing it against order from Future Innovative Systems (Pune

based VA alumni enterprise). It will be Proportionate Integral Derivatives (PID) based feedback mechanism for auto-switching heaters & fans inside incubator. Lab trial is underway for first prototype.

iv] Ashish modified sprouting machine (Grocubator) to over-come issue of insufficient water drain. The issue was due to improper sensing of drum rotation. He changed motion sensor to IR sensor & successfully conducted lab trial for horse-gram (channa) sprouting. Presently machine is under field trial with VA kitchen.

v] Swapnali started working on isolation & multiplication of microbial consortium of Effluent Treatment Plant (ETP) of ASK chemicals (formally SI Group), Ranjangoan. This work is against the requirement from them. We are taking technical guidance from Dr.Anuradha Zape (Assistant professor, Microbiology department, YMC, Bharati Vidyapeeth) for execution of this project.

vii] Fab-academy update: Fab-academy classes are progressing well. Students are busy with weekly online session followed by lab sessions. During February student learnt & performed tasks CAD modelling, computer-controlled cutting, 3D scanning & printing etc skill performed tasks to demonstrate learnings. Students learning can be found on- [Fab Academy2022 | Vigyan Ashram](#)



**Fab Academy : Laser cutting assignment**

#### **F] DBRT student learning updates**

DBRT students returned on campus in the first week of February with ease of COVID pandemic (3<sup>rd</sup> wave) restriction. Third section exam of students was conducted on 11<sup>th</sup> Feb and students joined their next section. Following are some of the important highlights of this month:

- Energy & Environmental section: Students visited water pump repair shop in Pabal village on 8<sup>th</sup> and 9<sup>th</sup> Feb to learn motor rewinding skills.
- Home & Health section: Students learn basics of sugar syrup-based preservation while preparing Gajar Halwa (15 kg), Instant Pooran (2.5 kg), Tomato Sauce (2.5 kg). Students also learn basic bakery skills while baking bread (Pav) from 20 kg flour for kitchen breakfast. Students also baked 2.5 kg coconut cookies for trial marketing in Pabal village.
- Agriculture & Animal Husbandry section: Students planted 40 plants of chilies and cabbages along with fenugreek in 10 kg silage bags. Due to water shortage students are trying 'multilayer bag farming' experiment.



**Electric motor repair**

- Leg of one goat kid was trapped in the cage. Its leg was fractures. After treatment, we sold the goat.
- Engineering section: Team of 6 students constructed brick walls of 'boys hostel recreation center'. They learnt basic civil work skills like preparing mortar mixture, brick laying, use of plumb bob etc. while constructing 766 sq ft wall construction. Student team earned Rs.6950.00 as labor charge for total construction value of Rs.62550.00. Students also learnt basic of plumbing, metal fabrication skills while fixing water pipes & door frames to this building.
- Mrs. Deepali Chaudhari (Assistant Project Manager, Durgadevi Charitable Trust) visited Pabal campus on 27th February for interviewing students for their scholarship program. This year 14 students applied for assistance out of these 5 most deserving students were selected through personal interviews.



**Construction of recreation center**

### **GJ IBT Maharashtra & Uttar-Pradesh updates:**

#### IBT Maharashtra:

- IBT setup and procurement of tools is in progress for IBT setup at Dharmavir Sambhajiraje Madhyamik Vidyalaya, Tulapur (District-Pune) with help of TATA technologies-CSR initiative. We have completed procurement & installations of tools and appointment of instructors in this month.
- IBT schools were busy in preparing for 'Technovation exhibition' and completing practical sessions. Following are some of the highlights of students activities during months as-



**Bamboo amplifier**

- Sumati balbhavan, Katraj fabricated a bamboo sound amplifier. It helps to amplify the sound by 10-12 decibels.
- Students at Amboli school, made electrical transformer anti-theft security kit for their village.
- Students of Nande School installed solar photovoltaic panels for street-lamp in school.
- Students of Chikhali School, harvested 80 kg brinjal from their farming plot.

#### IBT Uttar Pradesh:

- Sharad, Nazim and Vishal visited 40 schools in 15 districts during 12<sup>th</sup> February to 5<sup>th</sup> March to handover tools / equipment inventory to schools and guide on installation, instructor appointment etc. Remaining schools in March.



**Handover of tool inventory @ UP schools**

- Most of schools completed appointment of instructors. We are planning to conduct training of instructors in March.
- Training modules and content (manuals/ PPTs/ posters etc) development in Hindi language started with the help school teachers / local instructors.

**HJ Updates on ATL lab training & DIY lab:**

**ATL Chhattisgarh:**

i) Priyanka and Rahul participated in teachers training program organized by SCERT during 7<sup>th</sup> to 9<sup>th</sup> February @ Raipur. Training was aimed to introduce teachers with new National Educational Policy (NEP) in relation of change in pedagogy with relation to hands-on training & ATL applications. They also visited ATLS in Gariyaband.

ii) Following online sessions were conducted for ATL lab in state during February as –



Date	Session topic	YouTube link
1 <sup>st</sup> Feb	Using ATL Marathon dashboard	<a href="https://youtu.be/gsxx8KyFjTc">https://youtu.be/gsxx8KyFjTc</a>
4 <sup>th</sup> Feb	Radar Tracking system	<a href="https://youtu.be/R3VwcJMT3Do">https://youtu.be/R3VwcJMT3Do</a>
11 <sup>th</sup> Feb	Smart Door Lock System	<a href="https://youtu.be/yRuMHO1C7zQ">https://youtu.be/yRuMHO1C7zQ</a>
18 <sup>th</sup> Feb	Application of Electronic Stability Program (EPS) System	<a href="https://youtu.be/1fRjEMfbsaqA">https://youtu.be/1fRjEMfbsaqA</a>
25 <sup>th</sup> Feb	Weather Station using ESP module	<a href="https://youtu.be/KIrxZVvm9WE">https://youtu.be/KIrxZVvm9WE</a>

iii) A meeting to understand status of ATL in Karnataka was organized on 11<sup>th</sup> Feb. Meeting was attended by Govt officials from Samagra Shiksha, AIM officials, Unicef and Vigyan Ashram.

**ATL Andra-Pradesh:**

- Prathmesh, Vipul & Rajeev are visiting ATL schools. We are shortlisting 20 ATL to make them model ATLS.
- Team conducted 10 online sessions for ATL labs in state through YouTube live with cumulative viewing of 6600+ participants from 349 ATL labs of 13 districts. Sessions details can be found on YouTube channel



ATL Reddigudem, Andhra

<https://www.youtube.com/playlist?list=PLfb0AVQ89OKaBMw4aNuHHN3Ckxz8jrmwa>

**DIY lab Pune updates:** 5 workshop sessions were conducted for monthly members students in DIY lab. Students learnt application of Arduino micro-controller for LED based hydroponics, Smart Samai, Simple robots etc. DIY Lab is also helping IBT students in their projects for Technovation exhibition.

## I] Distance Learning Library (DLL) & Wikipedia Update

### Distance learning library update:

- Fibre Reinforced Plastic (FRP) enterprise video course content is ready along with supportive document, questionnaire etc.
- Scripting work started for domestic solar PV system, paver block making and composting of agro-waste topics.

### Wiki-Marathi updates:

- Wiki team completed scanning of 574 pages of 'Technology & Engineering of textile' a publication by Rajya Marathi Vikas Santha & Dattajirao Technology Institute (Mumbai). We have received 3 volumes of textile technology books for their digitalization.
- 50 devotional poetries of Sant Eknaath (एकनाथांचे अभंग) were published on wiki-books. They are compiled by Mrs. Usha Dixit (Ajji) along with Marathi explanations. They are available on link - [एकनाथांचीं भजनें - विकिबुक्स](https://www.wikibooks.org) [\[wikibooks.org\]](https://www.wikibooks.org)

## J] Other tit-bit:

- Due to acute water shortage, almost all outdoor farming activities have been stopped on campus. At present we are purchasing 5500 lit water/day through tanker. We are also trying to save plantation by using approx. 3500 lit/day recycled grey water.
- Yogesh presented VA proposal for Strengthening, Upscaling and Nurturing Innovation for livelihood (SUNIL) scheme under Department of Science & Technology (DST) in an Executive Committee (EC) meeting on 8<sup>th</sup> February.
- Pooja Jadhav resigned from DIY instructor for better prospect. We wish her best luck for her future endeavours.
- Dr. Yogesh Kulkurni, Mr. Ranajit Shanbag, Mr. Sanket valse & Mr. Rautrai Saudager & Mr Prasad Patil visited Digrajwadi on 3<sup>rd</sup> Feb to finalize site for grey water recycling. Present site is nearby nala (gutter) and we need to design on 300<sup>2</sup>ft area (10 ft \*30ft).
- Mrs.Suvarna Wadakar (DIC-Cordinator), Suyog Warghade (DLL content development) and Indrajeet Joshi (DIY Lab instructor) joined team for their respected projects.
- Yogesh gave a talk on 'Story of students of Vigyan ashram' at a National skill convention, 2022 organised by symbiosis college of Arts and Commerce on 23<sup>rd</sup> Feb.
- Yogesh gave a 'Sardar Vallabhai Patel Memorial Lecture' at Gujarat Vidyapeeth, Ahmedabad on 7<sup>th</sup>Feb. The talk was organised as a part of centenary celebration of Vidyapeeth. Yogesh talked about 'Self sufficient villages' on the occasion.
- Weather record – Rainfall of the month -0 mm (Total: 650.98 mm) ,Max temp-34.00 °C, Min Temp – 11.00 °C , Humidity – NA % , Water height in well– 7.50 M.



Site @ Digrajwadi

- ix. Energy consumption record- Electricity unit – III Phase -1262 units , I Phase import- 297, Solar generation- 1616. DG used – 00.00 Hrs.
- x. Animal Husbandry section update – Milk production – 346.50 Kg, Poultry –NA, Goat- NA
- xi. Biogas produced-20 M<sup>3</sup> (Dung used- 502 Kg), E-rikshwa use 1011 kms
- xii. Online visitors: www.dsttara.org – 883 (New visitor-804 Repeated- 79), www.vigyanashram.com – 841 (New visitor-681 Repeated- 160)

KJ Data Report: [shorturl.at/hqK79](http://shorturl.at/hqK79)

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### Photo Gallery:



Yogesh visited ISKON – skill training center, Palghar on 20<sup>th</sup> Feb. [ with DBRT alumni and Mr.Anand Gosavi]



DBRT students doing soil testing



Priyanka , Rahul @ SCERT office, Raipur



Water tanker every alternate day ..



EDP Survey at Mojraj(Karjat) with Anubhav Pratishthan team



Brinjal @ IBT school - Chikhali

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