



SHRI VILE PARLE KELAVANI MANDAL'S
Institute of Technology, Dhule.

Dist. Dhule (M.S.).
www.svkm-iot.ac.in

Department of Mechanical Engineering
Report on
Industrial Visit
To

Jain Irrigation and Jain Hill's Jalgaon
13th December, 2022

The SVKM's Institute of Technology had organized an industrial visit for students of 3rd year and 4th year Mechanical Engineering Department, on the 13th December, 2022. The visit was to Jain Irrigation and Jain Hill's, Jalgaon. The visit started at 10:00 AM of Within the industrial premises at first Jain Hill's (Jain Farm Fresh Food Ltd., Jain Bio-Gas Power Plant, Jain Solar Photovoltaic Power Plant) and afterword they visited to Jain Irrigation System Ltd. Mr. Yogesh Joshi (PRO- Jain Irrigation) was with us and guide to all the students during the visit with their supervisor and brief up with the introduction about the working.

Details of Visit:

Date: 13th December 2022

Place: Jain Irrigation and Jain Hill's, Jalgaon.

Address: Jain hills, Shirsoli Rd, Jalgaon, Maharashtra and Jain Plastic Park (JISL), P.O. Box 72, NH No.6, Bambhori, Jalgaon-425001.

Time: 10:00 AM to 05:30 PM

Faculty Coordinators: Dr. Md. Hussain, Prof. Yogesh Sonawane, Prof. Bhushan Behede.

Staff Coordinators: Mr. Mahendra Patil, Mr. Amol Mahajan.

Visitors: Students of 3rd year and 4th year Mechanical Engineering Department.

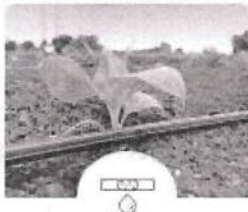


Company Profile:

Jain industry is established 1986 as an irrigation industry and founder of the industry was Mr. Bhavarlal Jain in Jain Irrigation Systems, or Jains, is an Indian multinational conglomerate based in Jalgaon. It develops, manufactures, supports and sells diversified products, including drip and sprinkler irrigation systems and its components, integrated irrigation automation systems for monitoring and control, dosing systems, PVC and PE piping systems, plastic sheets, greenhouses, bio-fertilizers, solar power, solar water-heating systems, solar water pumps, turnkey biogas plants, photovoltaic systems, and tissue culture plants. JISL also processes dehydrated vegetables, spices, concentrated & frozen fruits, or pulp. It also provides turnkey projects and agronomical support services.

Jain Irrigation Systems Ltd. emerged as one big company after merging with various Jain Group Companies, such as Jain Plastic & Chemicals Ltd., Jain Kemira Fertilizers Ltd., Jain Rahan Biotech Ltd, Jain Brothers Industries, Anubhuti School, and Jain Pipe. Jain continued acquiring companies to expand its business penetration. After some big acquisitions it became currently second-largest irrigation company and third-largest dehydrated onion producer in the world.

JISL then acquired Tera Agro Technologies and the mango-processing division of Parle-Bisleri Pvt. Ltd., both located in India. After this and similar other acquisitions, JISL became the largest processor of fruits & vegetables within India and the biggest mango pulp processor in the organised sector of the world.



Drip
Irrigation Systems



Micro & Mini
Sprinklers



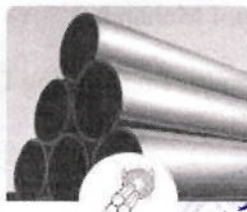
Sprinkler
Irrigation



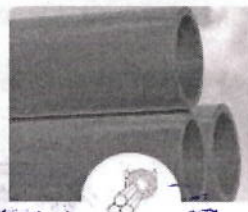
Filters, Dosing
Pump & Injectors



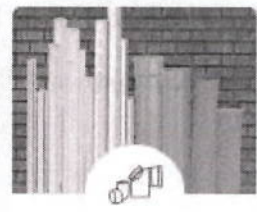
PVC Pipes &
Fittings



PE Pipes
Fittings



Polypropylene
Piping



Plumbing
Systems





Figure 1 All Products of Jain Industries

Jain farm fresh food ltd. Industry:

Industry works on the fruits import/export. There are 9 varieties of the fruits operation as per the fruit season in the industry. Mango, Banana, Guava, Apple, Orange, Watermelon, Grapes, Pomegranate, and Jackfruit this kind of fruits are machined in and industry. Major product of industry in related to Mango fruit, and they use two kind of mango fruit in their industry Alphonso and Totapuri mango which is imported from Gujarat state and Konkan region from Maharashtra. They produce mango splices, mango pulp, mango jams, mango ice-creams, mango candies and mango juice in the industry. And this product exported to industries like Coca-Cola, Parle and Britannia.

Process followed in Jain farm fresh food ltd. Industry to form their product:

First fruit are unloaded from the trucks and shifted into the carts. Then fruits shifted towards primary conveyer, which is use for cleaning of Fruits, once cleaning of fruits is done with water, physical impurities get removed. While purchasing fruits industry must check that the fruits are not completely rotted. After inspection of fruit, it goes for ripping process and store in ripping zone for 8 days under ethanol liquid spray in 35°C. after fruit get ripped it goes for peel removing and the pulp of fruit get removed and it goes for sterilization process. It takes place at -40°C for maintaining quality for 2 years.





Figure 2 Group picture in the quality measuring laboratory of Jain farm fresh food ltd

Manufacturing statics of industry:

Sr. No.	Fruit or vegetables	Manufacturing capacity
1.	Mango	175,000 Metric tonnes/Year
2.	Onion and other vegetables	200,000 Metric tonnes/Year
3.	Banana	40,000 Metric tonnes/Year

Jain Bio-Gas Plant:

After Food processing industry we visited Jain bio-gas plant located on Jain hills. Biogas plant works on waste generated from food industry like mango pills, seed cases, and other food waste, then agricultural waste, etc. this plant works to generate electricity which is utilized in other Jain industries. First the hydrolysis process is carried out for 8 Days. Fermentation process is carried out for 30 days. This bio- gas plant generated three state Biogas, water, and slurry. Biogas goes for electricity generation in the boiler and after boiler it goes for generation house and that electricity utilized in Jain industries only. After separating slurry and water, water is utilized in farm for crop feeding or used for cleaning of fruits or any other Equipments of manufacturing. The gas obtained contains 70% methane. Remaining content of gas is Carbon dioxide and small traces of sulphur.





Figure 3 Biogas Plant Layout



Figure 4 Group Picture at biogas-plant

Jain Solar Photovoltaic Power Plant

Jain Irrigation Systems Ltd. has installed 8.5 MWp Grid Connected Solar Power Plant for its captive consumption. This plant is the First Solar Open Access Plant in Maharashtra.

Key High Lights:

- Solar panel made of silicon crystalline structure photovoltaic cell.
- 7.5 MWp is installed on fixed structure
- 1 MWp is installed on single axis & dual axis trackers





Figure 5 Group Picture at Solar Photovoltaic Power plant

Jain irrigation System LTD:

The industrial guide explained about the difference between flood irrigation and drip irrigation. He also explained deterioration of soil quality in terms of fertility due to flood irrigation. He also addressed the problems of waterlogging and salination. Then he explained us how drip irrigation overcomes the above problems and how can be save water. He introduced the types of irrigation systems i.e., inline and online drip irrigation systems. Then he showcased diverse types of nozzles, sprinklers, jets, misters, foggers micro and mini sprinklers, hose pipes, (PE) polyethylene pipes, plumbing and drainage systems and (HDPE) High density polyethylene pipes.



Figure 6 Group Picture at Jain Irrigation System LTD.

Students visited manufacturing plant of Jain irrigation in which they observed the manufacturing of plastic sprinklers using injection molding process, the injection molding plant included the automatic operated CNC machineries placed in an inline layout with approx. 5-6 line where each line included 8-10 automatically operated CNC machines. Also, they visited the PVC plant in the facility, where Mr. Abuj Mahadev introduced about, the use of extrusion process incorporated in the manufacturing of the PVC pipes in the facility. The PVC plant also included the automatic machineries same as that of injection molding plant.

Outcome from Industrial Visit:

The purpose if industrial visit for student is to provide technical knowledge with the technological development in the industry and to understand the gap between the theoretical and practical knowledge that could be passed in future. This experience can help students to provided information regarding functioning of various industries and associated problems and limitations.

Students learned about the types of safety parameter and quality control systems implemented within the process plant. The practical use of the theoretical concepts used throughout the industry viz., the product layout design, 5S, Six Sigma, etc. They also acknowledged about industries are interdependence over each other for the supply of their raw materials. They also learned about interaction, working methods and employment practices.

They realized about, the impact of automation in current the industries, where majority of machinery being used in the industry were automated machineries. While each operator was assigned with a whole machine line with 5-6 automatic CNC Machines in one single line. Properties of PVC material required for Extrusion process and how material get converted solid into extrusion state is checked.



Permission Letter



Shri Vile Parle Kelavani Mandal's Institute of Technology, Dhule

Survey No. 499, Plot No. 02, Behind Gurudwara,
Mumbai - Agra Highway, Dhule. (C2562) 297801, 660033
✉ iotdhule@svkm.ac.in 🌐 www.svkm-iot.ac.in

Hon. Shri. Amrish R. Patel
(President)

Dr. Nilesh P. Salunke
(Principal)
Ph.D. M.E. LMISTE

SVKM/IoT/Admin/2022-23/124

Date-29/11/2022

To,

Mr. Yogesh Joshi,

PRO, Jain Irrigation Systems Ltd.

Jalgaon-425001

Subject: Permission required for Industrial visit at Jain Irrigation and Jain Hills.

Respected Sir,

Shri Vile Parle Kelavani Mandal's Institute of Technology Dhule is one of the most reputed Engineering Institution in North Maharashtra and known for its excellent record in academics and co-curricular activities. The college offers Bachelor degree course in Computer, IT, Electrical, Civil and Mechanical Engineering.

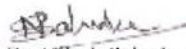
As a part of the curriculum, the students are required to undertake Industrial Visit to any industry. We feel it will be fruitful that the students with academic background have a glimpse in order to have a better appreciation of practical applications of theory.

In the above background, we would like to send 54 students of Final year Mechanical and 42 Students of third year Mechanical accompanied by 8 faculty staff members to visit your esteemed industry at Jalgaon, preferably on 13th December 2022, as per your convenience.

I request you, kindly accord the necessary permission for the above mentioned visit and arrange for guiding the students. We assure you that our students will observe the rules and regulations that are prescribed by your organization for the visitors and will in no way disturb the functioning of the same during their visit.

We shall be grateful for a favorable response.

Thanking You,


Prof. Dr. Nilesh Salunke,

Principal, SVKM's IoT, Dhule
Principal
SVKM's Institute of Technology, Dhule



Conduction Letter given by Jain Irrigation



13/12/2022

CERTIFICATE

This is to certify that 82 Engineering students from SVKM's Institute of Technology, Dhule, along with Faculty and staff Coordinator Dr. Md. Hussain, Mr. Yogesh Sonawane, Mr. Bhushan Behede, Mr. Mahendra Patil and Mr. Amol Mahajan visited our Jain Irrigation Systems Ltd. Jalgaon on 13 December 2022 (Tuesday) for plant visit & training. They learnt about manufacturing processes, hitech farming techniques & micro irrigation systems. We really appreciate the initiative taken by them. We wish them all the best for their bright future ahead.

For Jain Irrigation Systems Ltd.

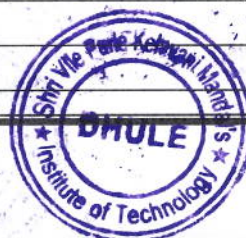

Yogesh Joshi
Public Relation Officer.

Regd. Off.: Jain Plastic Park, P.O. Box: 72, Near No. 6, Jalgaon - 425 001, India.
Tel: +91-257-2258011; Fax: +91-257-2258111; E-mail: jain@jains.com; Visit us at: www.jains.com
DIN: L29120MH1999PLC042028



LIST OF STUDENTS

SR. NO.	NAME	Year
1	WANI TEJAS SHRIKANT	Final Year
2	PATIL ANUSHREE SANJAY	Final Year
3	CHAUDHARI JAY VILAS	Final Year
4	MORE MAYURESHWAR HITENDRA	Final Year
5	MAHALE NISHAT SUNIL	Final Year
6	GUJAR PRANAV KISHOR	Final Year
7	DEORE BHAVESH KISHOR	Final Year
8	KARANKAL KUNAL RAVINDRA	Final Year
9	PATIL ROHIT SUDHAKAR	Final Year
10	JADHAV MAYUR ANIL	Final Year
11	SONAR LOKESH SUNIL	Final Year



12	SONAR TEJAS MAHENDRA	Final Year
13	PATIL HRUTIK PRAMOD	Final Year
14	PATIL PRADYUMNA VILASRAO	Final Year
15	PATIL SUDIP SUNIL	Final Year
16	CHITTE CHINMAY SATISH	Final Year
17	JADHAV BHAVESH DILIP	Final Year
18	NAGPURE SANOOP DEEPAK	Final Year
19	CHAUDHARI HARSHAL VIJAY	Final Year
20	BHADANE YOGESH BHAUSAHEB	Final Year
21	MALI YOGESH BHIKAN	Final Year
22	BHAMARE OM MADHUKAR	Final Year
23	KHAN MUHAMMAD FAISAL VAJID	Final Year
24	ANSARI ADEEL AHMAD GHULAM	Final Year
25	BAIG JUNED SAMSER	Final Year
26	PATHAN AAMIR KHAN ASHFAQUE	Final Year
27	QUAZI AABID HUSAIN BASHIRODDIN	Final Year
28	BAGUL SUMIT RAJESH	Final Year
29	SHINDE PRUTHVIRAJ TUSHAR	Final Year
30	RAJPUT TANMAY GOVIND	Final Year
31	GUDHE MEHUL ANNASAHEB	Final Year
32	JANGID PANKAJ MAHESH	Final Year
33	PATIL AJIT MAHESRAO	Final Year
34	PATIL RAHUL RAJENDRA	Final Year
35	AHIRE MANAS PRAVIN	Final Year
36	BHADANE PRASAD RAKESH	Final Year
37	PATIL PRANAV VILAS	Final Year
38	PATIL BHATU SANTOSH	Final Year
39	BHAGWAT RAHUL ARUN	Final Year
40	DEORE ANIKET GORAKH	Final Year
41	PATIL ANKIT PANDITRAO	Final Year
2	SONAWANE PRATHAMESH	Final Year
43	OTARI ROSHAN KISHOR	Final Year
44	BHANDARKAR GAURAV SANJAY	Final Year
45	DALAL SIDDESH NITIN	Third Year
46	SALUNKE AKSHAY JITENDRA	Third Year
47	PATIL NEHA DILEEP	Third Year
48	MAGAVKAR SAI PRAVIN	Third Year
49	MAHALE AKSHAY RAJENDRA	Third Year
50	PRATIK KOSHTI	Third Year
51	PATIL HARISH RAJESH	Third Year



52	PARDESHI AANCHAL SATISH	Third Year
53	PAWAR VIVEK SHANTARAM	Third Year
54	FAIZ NURUDDIN SHAIKH	Third Year
55	GIRASE RUPESH NARAYANSING	Third Year
56	WAGH DIVY RAJESH	Third Year
57	DEEPAK PANJWANI	Third Year
58	VEDANT TANDALE	Third Year
59	DEORE PRATHAMESH DASHARATH	Third Year
60	RUSHIKESH PAWAR	Third Year
61	MALI VISHAL ASHOK	Third Year
62	ADITYA GHARDE	Third Year
63	TUSHAR JAWARE	Third Year
64	WANKHEDE CHAITANYA KISHOR	Third Year
65	VISHV SONAR	Third Year
66	GUNVANT DINKAR PATIL	Third Year
67	SONAWANE JITENDRA RAJENDRA	Third Year
68	PRATIK MARATHE	Third Year
69	PRATIK PATIL	Third Year
70	ROHIT WAGH	Third Year
71	RUSHIKESH CHAVAN	Third Year
72	PATIL GIREESH SURESH	Third Year
73	TAMBOLI AZHAN AJAZ	Third Year
74	SALUNKE GAURAV PRAVIN	Third Year
75	CHAITANYA BADGUJAR	Third Year
76	SONAR KIRAN SANJAY	Third Year
77	PATHAN ALEEM KHAN ARIF KHAN	Third Year

Mr. Yogesh Sonawane
Faculty Coordinator

Dr. Hitesh Thakare
Head, Mech. Engg. Dept.
SVKM's Institute of Technology, Dhule

Dr. Nilesh Salunke
Principal & Patron
Principal
SVKM's Institute of Technology, Dhule



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