Name of Centre	South Gujarat Local Centre	
Activity Under Division Board	GENERAL	
Production EngineeringDivision Board (PEDB)	14th December, 2019	**Venue**: Chhotubhai Gopalbhai Patel Institute of Technology (CGPIT), UTU, Bardoli.

A Report of National Symposium on "Cleaner Production and Green Technology"

A National Symposium on "Cleaner Production and Green Technology" was organized by the IE(I)SGLC Surat along with Mechanical/Automobile Engineering Department at Chhotubhai Gopalbhai Patel Institute of Technology, UTU, Bardoli, dated 14th December 2019. There were around 60 participants (UG, diploma students, faculties and research scholars) who participated (Presentations and Attendee) in the Workshop. Total three keynote sessions were scheduled along with two parallel paper presentation sessions on the theme of the symposium.

The symposium is intended to provide an outstanding opportunity for researchers, academicians and industrial communities alike to address new trends and challenges, emerging technologies and progress in cleaner production and green technology for sustainability. Cleaner production activities include measures such as pollution prevention, source reduction, waste minimization and eco-efficiency. They involve better management and housekeeping, substitution of toxic and hazardous materials, process modifications, and reuse of waste products. At its heart, the concept is about the prevention, rather than the control, of pollution. The concept of cleaner production questions the need for a particular product, and looks at other ways to satisfy the demand. It is a slowing down of the rate at which we use resources, and a gradual shift from linear to more circular processes, similar to those found in nature. The eventual goal of clean production is to achieve a 'closed loop' operation in which all excess materials are recycled back into the process.

Er. Darshan Mehta and Er. Ketan Panchal, Corporate Members of IE (I)-SGLC, Surat and Dr. N. C. Shah, Advisor, UTU, Dr. S. A. Channiwala, Retired Professor, SVNIT Surat, Mr. Deepak Gadhiya, Chairman, Sunrise CSP Ind. Pvt. Ltd., Vadodara, Dr. C. M. Choudhari, Professor and Hean, Terna College of Engineering, Mumbai, Dr. R. V. Patil, Dean and Director, CGPIT, have shared the dais. The coordinator(s) of the entire national workshop Dr. Ravi Bhatt (Asst. Prof.) and Dr. Afzal Bhat (Asso. Prof.), Mr. Hiren Shah (Asst. Prof.) and Mr. Vikesh Patel (Asst. Prof.) along with Dr. Chinmay Desai

(Professor and Head, MED) and Mr. Darshan Kapadia (Asst. Prof. and Head, AED), participants and attendees have attended the inaugural ceremony.

The program has been initiated with UTU anthem followed by the lamp lighting and floral welcome of the dignitaries. Dr. Chinmay Desai briefed about the program schedule. Dr. N. C. Shah has shared the contribution of Surat in sewage treatment and importance of the clean water for future generations. Later, Dr. R. V. Patil has discussed about the critical issues related to cleaner production and remedial measures. He also shared the importance of the event on the World Energy Conservation Day (i.e. 14th December, 2019). Dr. S. A. Channiwala shared some statistics related to waste water recycling. Mr. Deepak Gadhiya described about the role of solar energy for the betterment of humanity. Dr. C. M. Chaoudhari emphasized on the different methods of elimination of waste. Further, Er. Darshan Mehta discussed about the roles and history about Institution of Engineers (India). He also provided some statistics related to journey of IE (I) till the century celebration in 2019. The inaugural ceremony is concluded by the vote of thanks by Mr. Darshan Kapadia.

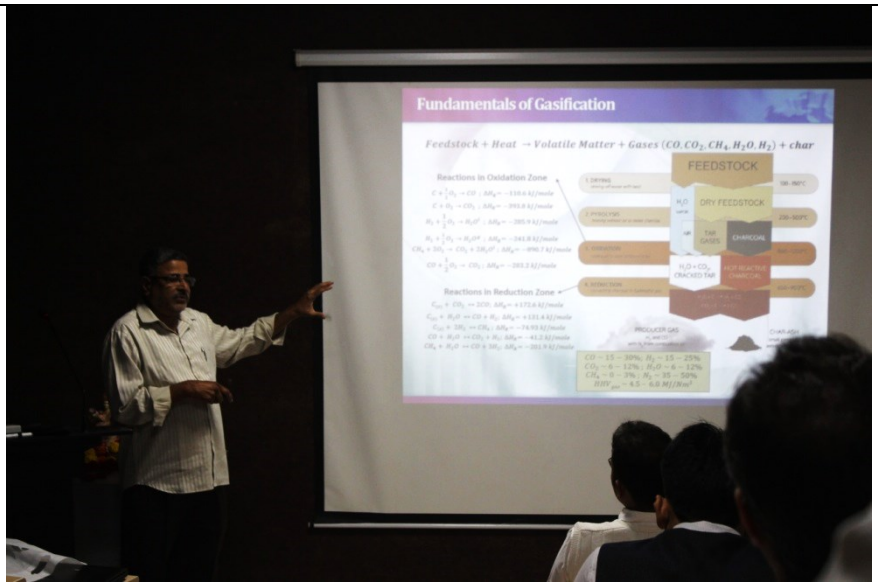
Some glimpses of Inaugural session are presented below.


National Symposium
On
"CLEANER PRODUCTION & GREEN TECHNOLOGY"
(As a part of Centenary Celebration of IE(I))
14th - December,2019
In Association with
Organized by
IE (I)


National Symposium
"CLEANER PRODUCTION & GREEN TECHNOLOGY"

Details of the Sessions:

Forenoon **Keynote Lectures**	**1st Keynote Lecture: Dr. S. A. Channiwala, Retired Professor, SVNIT, Surat.** **Topic: "Eco-friendly Gasification Technologies: An Upcoming Era"** Dr. Channiwala has discussed that alternative energy source is required for better tomorrow. He has demonstrated some statistics related to the energy consumption, coal and emission scenario of the world till 2019. He also discussed about the consequences of high rate of energy consumption, pollution and energy crises. Later, he introduced the concept of gasification. The term 'gasification' covers the conversion of any carbonaceous fuel to a gaseous product with a useable heating value. He showed the concept and history of gasification e.g. Tangye Gas Engine and Suction Gas Producer, gasification of shaft work (car run by burning wood), gasified coal, gasification of liquid fuel, modern day gasification plant (Integrated Gasification Combined Cycle Power Plants) etc. Further, he has discussed about the gasification scenario in India and conducted experimental research on gasification in India. Also, the zero effluent gasification concept of gasification was discussed by Dr. Channiwala. The plasma gasifier for hazardous waste management he demonstrated. Moreover, the design calculations of the gasifier were shown. He concluded the session with the future directions for the young researchers. 



2nd Keynote Lecture: Mr. Deepak Gadhiya, Chairman, Sunrise CSP India Pvt. Ltd., Vadodara.

Topic: "Journey of Solar & Social Entrepreneur Evolution of Solar Concentrator's"

Mr. Gadhiya has started the session with his journey towards the introduction of various devices operated by solar energy. He started his journey in solar energy with the solar cooker box. He discussed that the effectiveness of solar cooker can be improved with the parabolic concentrator. Later the concept is scale up for the mess of the Shirdi Temple and others. Further, the use of the solar energy is explored in farming and dead body disposition. He has designed, developed and implemented the solar air conditioning system using Vapor absorption system (LiBr) in the Muni Seva Aasram, Vadodara. Further, he also discussed about the potential areas wherein high heat demand arises and that can be satisfied with the solar energy operated instruments. He concluded the session with memories when former president Late Dr. A.P.J. Abul Kalam seeing his vision of "Providing Urban Amenities in Rural India" (PUARA) being implemented at Muni Ashram farm.


Journey of
Solar & Social Entrepreneur
Evolution of Solar Concentrator's
Deepak Gadhia, Trustee (Board Member)
NGO – Muni Seva Ashram
Chairman- Sunrise CSP India Pvt. Ltd.
deepak.gadhia@greenashram.org
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Muni Seva Ashram

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<tr><td>Afternoon

Keynote Lecture and Parallel Sessions</td><td>3rd Keynote Lecture : Dr. C. M. Choudhari, Professor and Head, MED, Terna College, Mumbai

Topic: “Numerical Simulation of Solidification in Metal Casting for Defects Minimization with Experimental Validation”

In this session, Dr. Chaoudhri explained the various applications of finite element simulations as proven and effective tool to eliminate waste of experimental trials. He demonstrated the application of numerical simulation for metal casting process. It was discussed that the defects in the sand casting was detected in ANSYS software and the remedial actions was obtained by AUTOCAST software. These discussion were continued with several case studies and showed that the experimentations were conducted for the successful numerical runs only.

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After the completion of the lectures by keynote speakers, the two parallel sessions of the paper presentations were started in the following sequence.

Track 1: Renewable Energy (Venue: SHRIMCA B102)
(Session Chair: Dr. Chinmay Desai)

Sr No.	Title of the Paper	Authors	Affiliated College
CPGT_1	DEVELOPMENT AND TESTING OF EVACUATED BOX SOLAR COLLECTOR	Daksh R Tandel, Ashish O Jain	GDEC, Abrama, Navsari
CPGT_2	A COMPREHENSIVE REVIEW ON FEASIBILITY STUDY ON THE PM & NO-X REDUCTIONS WITH THE USE OF WATER-IN-DIESEL EMULSION FUEL IN A DIESEL ENGINE	Bhupendra S. Patil, Dr. Rajesh C. Iyer, Mr Manthan Pathak, Farid Ansari	GTU & CGPIT
CPGT_3	DEVELOPMENT AND TESTING OF INDIRECT COOKING BY USING FRESNEL LENS	Vaibhav Dholariya, Lalaji Godhani	CGPIT
CPGT_4	DEVELOPMENT OF WIND OPERATED BIKE	Jayeshkumar Parekh, Umang Patel and Yash Panchal, Chaitanya Chevli, Jash Prajapati, Saurav Kheni, Yash Modi	CGPIT
CPGT_8	ANALYSIS OF BOILER BLOW DOWN PROCESS, AIR INGRESS IN CONDENSER AND EFFECT OF COAL MOISTURE IN 210 MW THERMAL POWER PLANT USING SIM SIMULATOR	Mehul Chhowala, Rahul Patel and Jaydeep Patel	SCET & CKPCET, Surat
CPGT_17	A STUDY ON DESIGN AND	Mr. Maurya	CGPIT

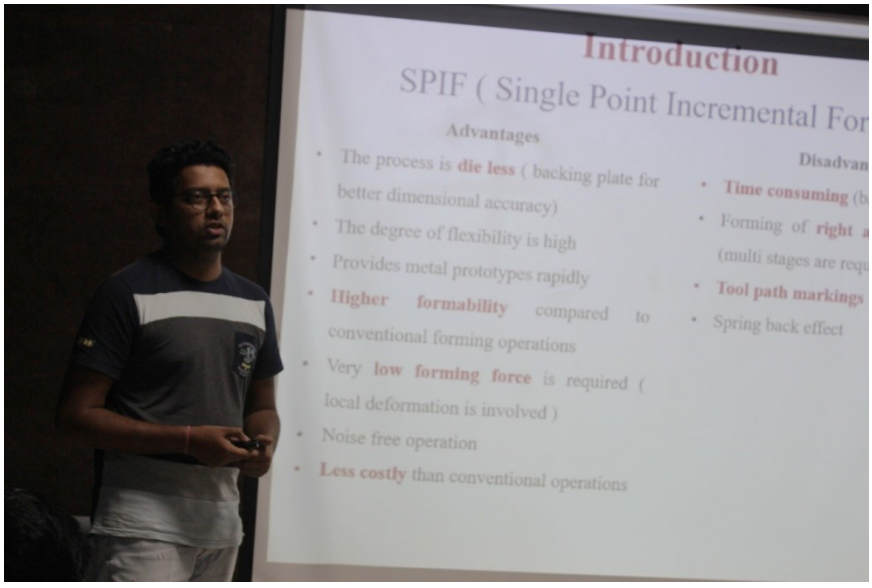
	CRASH ANALYSIS OF AUTOMOTIVE ENERGY ABSORPTION TUBES	Manishkumar .H, Dr Chinmay Desai	
CPGT_19	A REVIEW ON THE EFFECT OF ADDITIVES ON FUEL PROPERTIES, ENGINE PERFORMANCE AND EMISSION CHARATERISTICS	Mr. Radheshyam Dudhrejiya, Prof. Darshan Kapadia	CGPIT
CPGT_21	EXPERIMENTAL PERFORMANCE OF MULTISTAGE SOLAR THERMOELECTRIC REFRIGERATION	Brijesh Gadhiya, Harshit Desai and Bhavik Parmar	SSASIT & CGPIT
CPGT_22	PERFORMANCE PARAMETER TESTING OF THERMOELECTRIC MODULE FOR REFRIGERATION PURPOSE	Avinash Chaudhary, Harshit Desai, Mayur Gohil, Mary Florence	CGPIT

Track 2: Production Technology (Venue: SHRIMCA-B105)
(Session Chair: Dr. C. M. Chaoudhari)

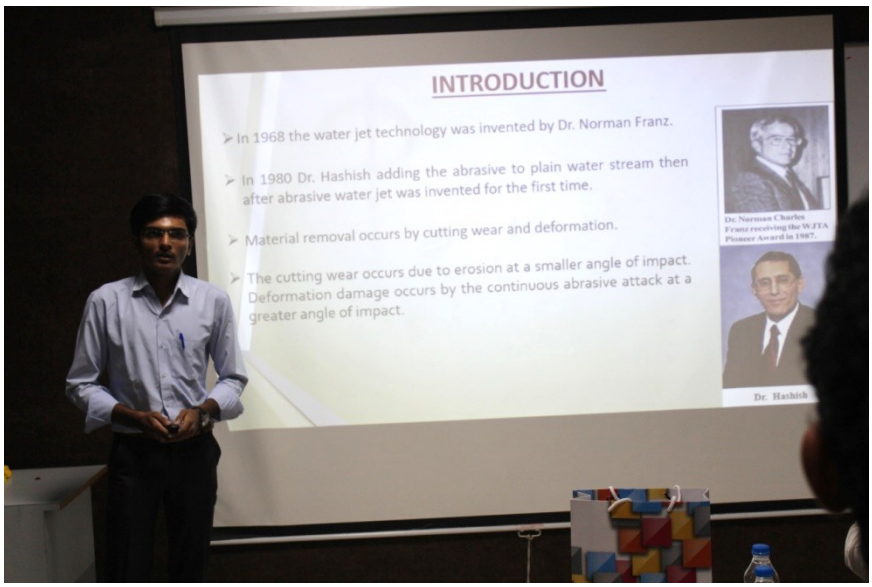
Sr No.	Title of the Paper	Authors	Affiliated College
CPGT_6	A NUMERICAL INVESTIGATION ON FORMING BEHAVIOUR OF HOMOGENEOUS BLANKS DURING SINGLE POINT INCREMENTAL FORMING PROCESS	Shalin Marathe, Harit Raval	S. V. National Institute of Technology, Surat, Gujarat, India
CPGT_7	OPTIMIZATION OF PROCESS PARAMETER ON FRICTIONAL STIR WELDING : A REVIEW	Jagadale Vishal H,Lad Megh S , Mishra Siddharth V and Champaneri Gaurang K	RNGPIT, Bardoli, India
CPGT_9	CURRENT RESEARCH AND DEVELOPMENT IN ABRASIVE WATER JET MACHINING (AWJM): A REVIEW	Nikunj Vasoya, Prof. Ketan D. Panchal	GEC Valsad
CPGT_10	EFFECT OF PROCESS PARAMETERS ON DEPTH OF CUT IN ABRAVSIVE WATER JET CUTTING	Chandresh D. Kanani , Prof. Ketan D. Panchal	GEC Valsad
CPGT_11	ABRASIVE WATER JET MACHINING- AN INTRODUCTION	Neel D. Mahant , Prof. Ketan D. Panchal	GEC Valsad
CPGT_12	ABRASIVE WATER JET CUTTING : A GREEN MANUFACTURING TECHNOLOGY	Prof Ketan D Panchal , Dr A A Shaikh	GEC Valsad & SVNIT Surat
CPGT_13	STATE OF ART RESEARCH AND	Saurav Patel,	GEC Valsad

	DEVELOPMENT IN ABRASIVE WATER JET CUTTING	Prof Ketan D. Panchal	
CPGT_14	EFFECT OF CUTTING PERFORMANCE ON SURFACES ROUGHNESS IN ABRASIVE WATER JET CUTTING	Sagar V. Rana, Prof. Ketan D. Panchal	GEC Valsad
CPGT_15	MODELLING OF ABRASIVE WATER JET MACHINING:ARTIFICIAL NEURAL NETWORK APPROACH	Bhavin Desai , Deep Lad, Prof Ketan D. Panchal	GEC Valsad
CPGT_16	SINGLE PARTICLE IMPACT ON TARGET MATERIAL DURING ABRASIVE WATER JET CUTTING: A NUMERICAL STUDY	Vatsal Patel , Prof Ketan D. Panchal	GEC Valsad
CPGT_18	A REVIEW: UNMANNED AERIAL VEHICLE IN ADVANCE AGRICULTURE.	Gaurang Patel, Krunal Gaywala	CGPIT
CPGT_20	DEVELOPMENT OF FFT ANALYZER FOR MEASURING VIBRATION	Mr. Mihir H Patel, Prof. Ankit J Desai	CGPIT
CPGT_23	SUSTAINABILITY IN ADDITIVE MANUFACTURING	M Afzal Bhat, Kevin Bhatt, Devanshu, Sagar Shah	CGPIT

The glimpses of the parallel sessions are presented below.




Optimization of process parameter on frictional stir welding : A review


INTRODUCTION
In 1968 the water jet technology was invented by Dr. Norman Franz.
In 1980 Dr. Hashish adding the abrasive to plain water stream then after abrasive water jet was invented for the first time.
Material removal occurs by cutting wear and deformation.
The cutting wear occurs due to erosion at a smaller angle of impact. Deformation damage occurs by the continuous abrasive attack at a greater angle of impact.
Dr. Norman Charles Franz receiving the WJTA Pioneer Award in 1987.
Dr. Hashish

SCHEDULE OF NATIONAL SYMPOSIUM

TIME	TOPIC	VENUE
9 am to 9:30 am	**Registration & High Tea**	**Foyer B 105** **SRIMCA**
9:30 am to 10:00 am	Inauguration Ceremony	B 105 SRIMCA
10 am to 10:45 am	**Keynote Speaker -1 (Dr S A Channiwala,** Rtd Professor, SVNIT, Surat**)** Topic: Eco-Friendly Gasification Technologies -An Upcoming Era	
10:45 am to 11:30 am	**Keynote Speaker -2 (Dr Deepak Gadhia,** Chairman, Sunrise CSP India Pvt. LTD, Vadodara) Topic: Journey of Solar & Social Entrepreneur Evolution of Solar Concentrator's.	
11:30 am to 11:45 am	**TEA BREAK**	**Foyer B 105** **SRIMCA**
11:45 am to 12:30 pm	**Keynote Speaker -3 (Dr C M Choudhari,** Professor & Head, DME, Terna College of Engineering, Nerul West, Navi Mumbai) Topic: Recent advancement in Casting	
12:30 pm to 1:30 pm	**Lunch Break**	**Girls' Hostel Mesh**
1:30 pm to 3:30 pm	Two Parallel Paper Presentation Sessions	

Track 1: Renewable & Energy **Session Chair: Dr Chinmay K Desai, Professor & Head, DME, CGPIT** (Paper No: CPGT_1, 2, 3, 4, 5, 8, 17, 19, 21) Venue: B102, SRIMCA		
Track 2: Production Technology **Session Chair: Dr C. M. Choudhari** (Paper No: CPGT_6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 18, 20) Venue: B105, SRIMCA		
3:30 pm to 4:00 pm	**Valedictory function**	**B105, SRIMCA**

(Er. D. G. Patel)
Hon. Secretary, IE(I)SGLC