



Pimpri Chinchwad Education Trust's  
**Pimpri Chinchwad College of  
Engineering & Research**



***Department of Mechanical Engineering***

***E-MAGAZINE***

**Academic Year: 2021-2022**

**Sem-2**

**DIVE INTO THE TREASURE OF ART AND ACADEMICS.**

## **ABOUT TRUST**

Pimpri Chinchwad Education Trust (PCET) was established in 1990 by visionary Late. Shri. Shankarrao B. Patil, Late. Smt. Lilatai Shankarrao Patil, Shri. Dnyaneswar P. Landage, Shri. Vitthal S. Kalbhor, Shri. Shantaram D. Garade, Late. Shri. Bhaijan Kazi with an idea of providing quality education from K.G. to P.G. Its sole mission was aimed at serving society, the industry and all stakeholders through value-inculcating, quality education in the area of schooling, as well as professional tutelage in the fields of engineering, management and computer applications.

PCET has always been committed to its mission by creating, communicating, preserving and applying knowledge, art and academic values.

At the campus at Akurdi, Pune, near 7,200 students are being groomed in specialised courses like Engineering, MBA, MCA & PGDM by professional and passionate instructors. The campuses at Ravet are school to 1,200 would-be graduates at the College of Engineering, around 800 pupils at the Junior College, and approximately 2,500 students at the Public School, all amounting to a total of 11,700-odd students

## **Our Inspiration:**



Late shri. Shankarrao B Patil  
Founder President  
Pimpri Chincwad Education Trust



Late Smt Lilatai Shankarrao Patil  
Ex President  
Pimpri Chincwad Education Trust

## **Board of Trustees:**



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Shri. Harshwardhan S. Patil  
Trustee, PCET



Dr. Girish Desai  
Executive Director, PCET

## Principal's Desk



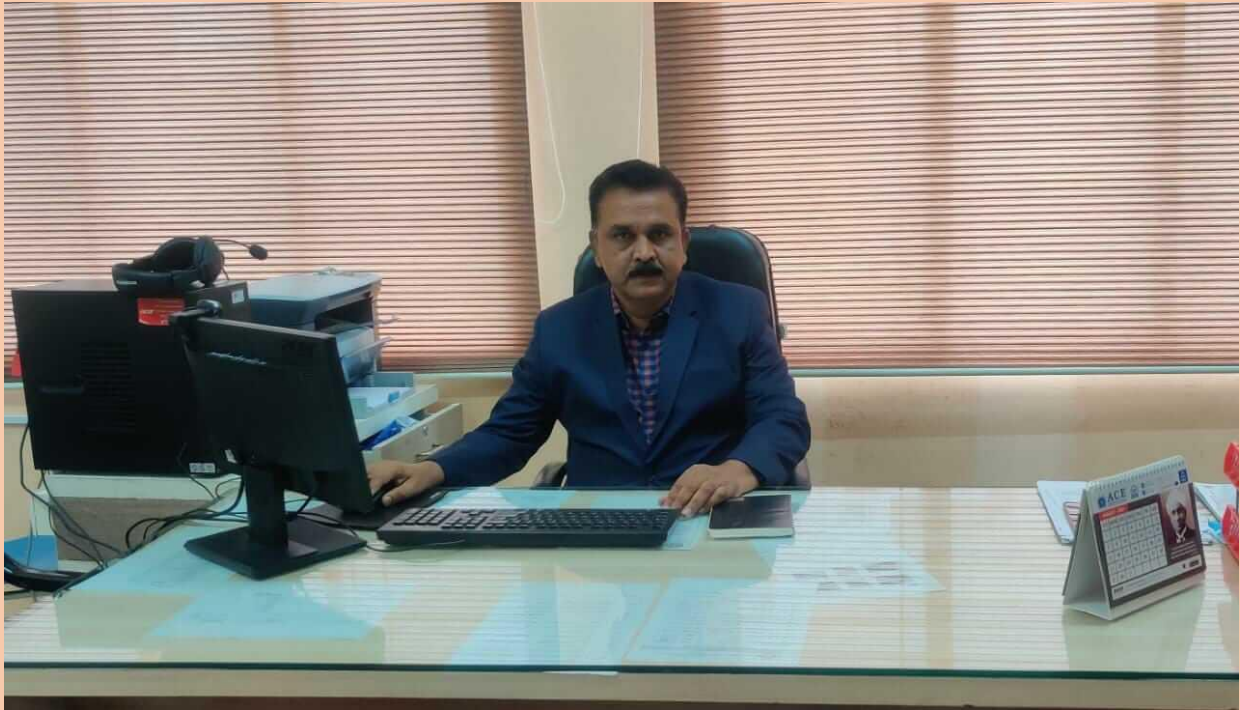
At the very outset, I extend a very warm welcome to all of you! It is indeed an honor and pleasure as the principal, to introduce you to Pimpri Chinchwad Education Trust's (PCET's) Pimpri Chinchwad College of Engineering & Research (PCCOER). Established in the year 2014, PCCOER has made an incredible progress in academics, research and placements in a very short period of time and has made its presence felt vividly in the educational circles of not only the University but of the entire State. I attribute this remarkable success to the tremendous efforts of faculty, staff and students of the Institute and to the strong and continuous guidance, motivation and support from PCET.

Young friends, India today stands as world's third largest economic power, its economy growing at around 8%. Indian entrepreneurs are emerging as global entrepreneurs. Indians are increasingly appearing in the list of the richest persons in the world. India's knowledge, skills and man-power are making India a preferred destination for outsourcing service needs. India is fast emerging as a hub for world class R&D and Innovation Centers. These are the signs of a brighter tomorrow for India and its citizens. You must, therefore, be highly excited to make your own contributions to the growth and development of your dream India.

As Engineering Institute, we are committed to contribute in the overall growth of the Nation by providing Outcome Based Education (OBE) to our students. We, at PCCOER, endeavor for an overall development in you, while academic excellence remains to be our strong fort. The spectrum of social, cultural, co-curricular and extra-curricular events at PCCOER is as intellectually stimulating, as is overwhelming! We do not turn you into book-worms or scholarly puppets but into competent professionals and genuine humans. At PCCOER, we have a tradition of nurturing leadership qualities, along with, developing abilities to comprehend the state of art technologies. This we do by inspiring you to partake a whole lot of innovative projects, being pursued by the inspired student's community, under the guidance of their faculty mentors. We let you empower yourself with the Wings of Knowledge and Power of Innovation. We imbibe in you a positive attitude and proactive thinking, a caring concern for humanity and nature and above all, an eagerness to serve and excel in your chosen domain. You come here with a passion; we convert that passion into your profession. life in PCCOER and I am sure that you will enhance the pride and prestige of this illustrious Institution by giving your best and achieving your best! And my dear faculty and sta members, we together have to play our role in Nation building by contributing wholeheartedly towards academics, research and innovation, a gigantic task which, I am observing you are succeeding in competently, skillfully and effortlessly.

Prof. Dr. Harish U. Tiwari,  
ME (IITR), PhD. (Mech),  
Principal,  
PCCOE&R, Ravet, Pune.

## HOD's Desk



A hearty welcome to the Department of Mechanical Engineering at Pimpri Chinchwad College of Engineering and Research (PCCOE&R), Ravet, Pune.. The department vision is to be a premier department of Mechanical Engineering and research to serve the need of the society and all the stakeholders. The Department is student centric and focused for overall development of students in the context of new emerging trends in the market and making the students competitive and strongly equipped with the various technical and professional skills. Different programs like Industrial Training program, Aptitude Training Program, SAE BAJA, SUPRA, TIFAN and Go-Cart activities are planned to equip the students to enhance their technical and professional competence and make them more industry oriented and employable.

The placements in the department are one of the best in the PCMC area. The Industry sponsored laboratories, Internships, experts sessions, Industry sponsored projects, communication skills and soft skills sessions, foreign languages, add on and value added courses are designed and executed so that students are not only market ready but also well trained for higher studies, entrepreneurship and startups. The department provides much needed support to the students' projects having potential for innovation and startups as well as

innovations and startups having innovative ideas. We have been able to create quite a good number of startups and entrepreneurs and have been able to build a very good ecosystem. Projects having potential for innovation and startups as well as innovations and startups having innovative ideas. We have been able to create quite a good number of startups and entrepreneurs and have been able to build a very good ecosystem.

The department is a leader in the area of IPR viz. Patents and copyright lling. More than 100 patents and 75 copyrights have been led in the department out of which two patents have also been granted in the department. The department has modern and well-equipped laboratories for practical training to its students. All the faculty members are well quali ed and experienced. We are committed to the pursuit of excellence. It is our goal to address the varying needs of our young students academically, socially, emotionally and by doing so, provide the highest quality educational experience to all and therefore PCCOE&R is one of the best Mechanical engineering colleges.

Department has strong association with different professional bodies like ISTE (The Indian Society for Technical

Education, QCFI(Quality Circle Forum of India) ASME(The American Society Of Mechanical Engineers.),VLSI, SAE Society of Automotive Engineers) and the department also has its own student council named as Mechanical Engineering Student Association (MESA). MESA provides a platform to the departmental students to showcase their technical, social and sports skills in inter-departmental as well as inter-college competitions.

On the closing note, it could be cited that - "Destiny is not a matter of chance, it is a matter of choice; it is not a thing to be waited for, it is a thing to be achieved".

Prof. Dr. Ramesh K. Rathod,  
Associate Professor & Head,  
Department of Mechanical Engineering,  
PCCOER, Ravet, Pune.



## About the Department

Mechanical engineering is one of the broadest engineering disciplines. Mechanical engineers design, develop, build and test. They deal with anything that moves, from components to machines to the human body. Mechanical engineering combines creativity, knowledge and analytical tools to complete the difficult tasks of shaping an idea into reality. Mechanical engineers can look for employment in diverse areas, including manufacturing, aerospace, automotive, biomedical, chemical, computer, communications, nanotechnology, power-generation industries, engineering consultancies, energy utilities. government agencies etc.

A Mechanical Engineer can also pursue his/her carrier in the public sector through competitive exams like UPSC, MPSC, IES. They can have placements in various public sector undertakings like Navratna and Maharatna by scoring excellently in GATE. They are having good placement opportunities in National and Multi-National companies by perusing ME/M.Tech/MS in India and abroad. They can also become job providers themselves by turning into entrepreneurs and starting own startups.

The Mechanical Engineering Department at PCCOER has been established in the year 2014 and since then, has progressed steadily towards excellence. The Department works on Outcome Based Philosophy (OBE), wherein the complete focus of the department is to prepare the students in such a way that he/she is oriented towards acquiring knowledge, skills, hands on training and ICT techniques by using various teaching pedagogies, which will lead them toward better placements, higher education and entrepreneurships. The audits of all these initiatives are conducted on regular basis and its execution is checked to ensure that students are getting really benefitted through the process.

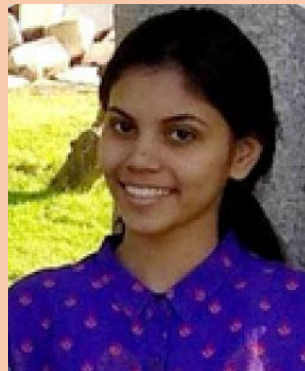
The department runs a UG programme in Mechanical Engineering, which is a 4 years, 8 semester's full time programme. Department has adequate number of faculty members and supporting staff, who are well qualified, experienced and dedicated. The department has well equipped 16 no. of state-of-the-art laboratories, spacious classrooms, drawing hall, project and innovation center. The department provides the students with a strong fundamental, scientific and technical knowledge-base, multidisciplinary approach and critical

thinking skills which serve as the foundation for lifelong learning in Mechanical Engineering. The department motivates and supports the students for Industry Sponsored Projects and Industrial Training so that they are well acquainted with the industrial problems and its solutions to be better prepared for the industries. The department also emphasizes on inculcating, professionalism, ethics and true attitude in the students. It also puts more efforts on strengthening communication skills, team work and social awareness among the students.

### **Magazine Coordinators:**



**Prof. Deepak Biradar**  
Faculty Co-ordinator



**Ms. Anushka Dusane**  
Editor



**Ms. Aditi Ingle**  
Editor

## ★ Vision of the Department:

To be a Premier Department of Mechanical Engineering and research to serve the needs of the society and all the stakeholders.

## ★ Mission of the Department:

**M1:** To provide state of art facilities to impart quality education.

**M2:** To undertake various value added and add on courses to make students technically sound and thorough professionals.

**M3:** To collaborate with the industries and academia and strive to transform the research and innovative aptitude in the students and faculties.

**M4:** To inculcate high moral, ethical values and national pride in students and faculties.

## ★ Programme Educational Objectives of the Department

**PEO1:** To develop well sound students in academic fundamentals to understand, analyze and solve problems related to Mechanical Engineering.

**PEO2:** To meet the employer's requirements at large and prepare them towards quality higher education and entrepreneurship

**PEO3:** To build up student's ability to enhance their competence in research and innovation to design product and process

**PEO4:** To create awareness amid the students about professional ethics, managerial skills, social commitment and lifelong learning.

## ★ Programme Specific Outcomes of the Department

**PSO1:** Develop the knowledge and skills relevant to the field of robotics and automation by undergoing hands-on training.

**PSO2:** Develop and implement new ideas on product design and development with the help of modern computer aided tools, while ensuring best manufacturing practices.

**“World Record India for ‘Maximum Number of Patent Filed by Engineering Couple in Single Day’”**



# Certificate

## **MAXIMUM NUMBER OF PATENTS FILED BY ENGINEER COUPLE IN A SINGLE DAY**

**Prof. Nilima Baliram Gadge** (Mrs. Bawane), Nutan College of Engineering & Research, Maval, Pune, Maharashtra, and Prof. Rahul Krishnaji Bawane, Pimpri Chinchwad College of Engineering & Research, Ravet, Pune, Maharashtra (a couple) an engineering faculty together have filed a total of 51 patents in a single day and set a New Record on 16th August 2021 at Indian Patent and Trade Marks Office, Bhoudhik Sampada Bhavan, Antop Hill, Mumbai, Maharashtra.



WRI : 9080 - 2022  
Date : 12th March, 2022

In Association with



Regd. No. E/20681/Wb&I/24th July 2014

Paavan Solanki  
Chief Editor - World Records India

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On 16th August 2021, filed 51 no. of patents by Dr. Rahul K. Bawane and his Wife Prof. Nilima R. Bawane (Gadge)

**KeyNote Speaker – “FDP on IPR Awareness and Patent Drafting”**



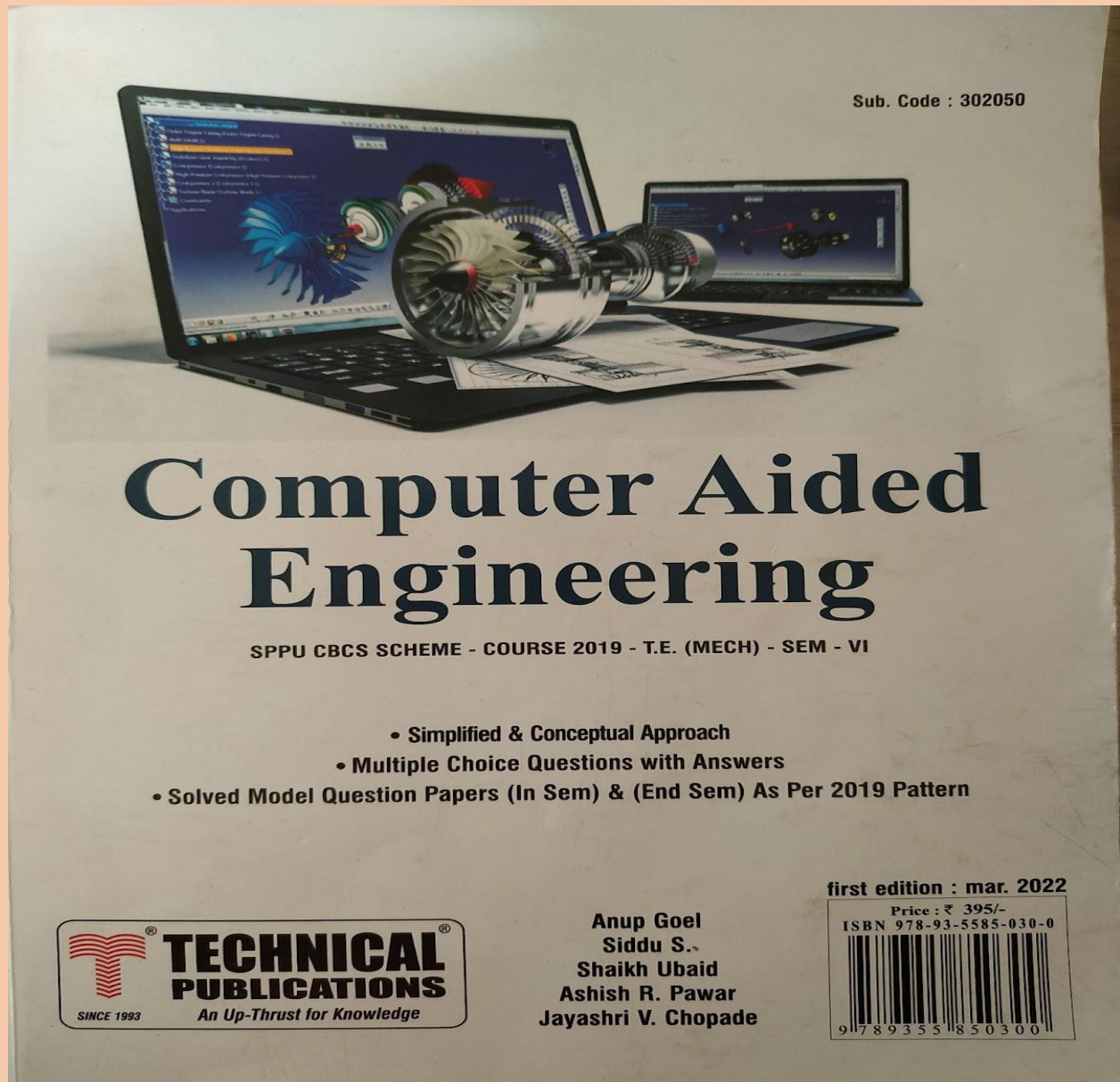
Dr. Rahul K. Bawane conducted FDP on IPR Awareness and Patent Drafting, at Modern College of Engineering, Shivajinagar, Pune on 13<sup>th</sup> & 14<sup>th</sup> Sep. 2021

**PBL Poster Exhibition and Competition**



PBL Poster Exhibition and competition organized on 25<sup>th</sup> February 2022 at 10 am onwards in Mechanical Engg. Dept. loby and Drawing Hall. 17 groups of 78 students took part in this exhibition. Mr. Shailesh Telge (MD-Uttam Tools) and Mr. Anand Bhise (MD-Mechatol Solutions) were present as examiners for this event.

**Book published for TE mechanical students**



Book published by Mrs. Jayashri Chopade for TE mechanical students under SPPU syllabus for 2019 pattern.

## Go Kart Event



Go- Kart Event - Auto India Racing Championship, Season – 05

Venue – Ajeenkya DY Patil University, Lohegaon, Pune

Name of Team- Team Mechaholics PCCOE&R

Result – 1 st Runner-up in Aesthetic Category


2 nd Runner- up in Innovation Category


Captain- Mr. Swapnil Borude

Faculty Coordinator – Prof. Sukhadip M Chougule.



## FILED PATENT

  
सत्यमेव जयते

  
**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

Controller General of Patents, Designs & Trade Marks

G.A.R.6 [See Rule  
22(1)]

**RECEIPT**  
Date/Time 2022/02/28 14:11:53

Docket No 11379

Harish Umashankar Tiwari Plot No. B, Sector no. 110,  
Gate no.1, Laxminagar, Ravet, Haveli, Pune - 412101  
Email: principal@pccoer.in

Sr. No.	Ref. No./Application No.	App. Number	Amount Paid	C.B.R. No.	Form Name	Fee Payment	Remarks
1	202221010579	TEMP/E-1/11607/2022-MUM	1600	5114	FORM 1	Full	HARVESTING VIBRATIONAL ENERGY USING REGENERATIVE HYBRID SUSPENSION SYSTEM
2	E-106/557/2022/MUM	202221010579	0	-1	FORM28	Full	

Dr. Harish Tiwari has filed patent on “Harvesting irrational energy using regenerative hybrid suspension system” .Application number- 202221010579.Date- 28/02/2022

## Ph.D Awarded



Dr. Rahul Bawane, Awarded Ph.D. in Mechanical Engineering, Sandip University, Nashik on 28th March, 2022.

## World Record



# Certificate

## **MAXIMUM NUMBER OF PATENTS FILED BY ENGINEER COUPLE IN A SINGLE DAY**

**Prof. Nilima Baliram Gadge** (Mrs. Bawane), Nutan College of Engineering & Research, Maval, Pune, Maharashtra, and **Prof. Rahul Krishnaji Bawane**, Pimpri Chinchwad College of Engineering & Research, Ravet, Pune, Maharashtra (a couple) an engineering faculty together have filed a total of 51 patents in a single day and set a New Record on 16th August 2021 at Indian Patent and Trade Marks Office, Bhoudhik Sampada Bhavan, Antop Hill, Mumbai, Maharashtra.



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A New Record in “World Records India”, “Maximum Number of Patents Filed by Engineer Couple in a Single Day” by Dr. Rahul K. Bawane on 16th August, 2021.

Paper Publication

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## Effect of Cottonseed Trimethylolpropane Ester as Lubricant Oil on Hydrocarbon Emission for Gasoline Engines

Published: 11 December 2021  
Volume 8, article number 20, (2022) [Cite this article](#)

**Journal of Bio- and Tribo-Corrosion**  
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Gulab Siraskar ✉, Vishnu D. Wakchaure & Ramchandra S. Jahagirdar

79 Accesses [Explore all metrics](#) →

### Abstract

Exhaust hydrocarbon emissions have been experimentally investigated for lubricating oils with petrol as fuel. Eight Lubricating oils SAE 5W30, SAE 5W40 synthetic, SAE 15W40, SAE 20W50 semi-synthetic, and SAE 15W40, SAE 20W50 Mineral, pure cottonseed oil, and

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Prof. Gulab Siraskar has Paper published in international Journal “Effect of Cottonseed Trimethylolpropane Ester as Lubricant Oil on Hydrocarbon Emission for Gasoline Engine”

### Paper Publication

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## Diesel engine emission characteristics for cotton seed (CS) trimethylolpropane (TMP) ester (CSTE) as lubricant

Original Paper | Published: 31 August 2021  
Volume 14, article number 1927, (2021) [Cite this article](#)

**Arabian Journal of Geosciences**  
[Aims and scope](#) →  
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Gulab Siraskar ✉, Vishnu Wakchaure & Ramchandra Jahagirdar

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### Abstract

Mineral established lubricant oils used for internal combustion (IC) engines, and it is not ecological and dangerous to the environment. Biobased lubricant (BBL) is ecological and

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Prof. Gulab Siraskar has Paper published in international Journal “Diesel engine emission characteristics for cotton seed (CS) trimethylolpropane (TMP) ester (CSTE) as lubricant”

### Book chapter

# Sustainable Engineering, Energy, and the Environment

Challenges and Opportunities



Editors  
Kailas L. Wasewar  
Sumita Neti Rao

 **CRC Press**  
Taylor & Francis Group  
APPLE ACADEMIC PRESS

Book chapter in Taylor and Francis by Prof. J. V. Chopade on chapter “Evolution of waste to wealth: An overture to reduce insidious effect”

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