

Report

Webinar on “Recent trends in Internal Combustion Engines”

Department of mechanical engineering, Government Engineering College, Valsad had organized webinar on “Recent trends in Internal Combustion Engines” on 13th July 2021 for the final year students of mechanical department. Total 94 students and 2 faculty members took part in this webinar. Dr. Chetankumar Pratapbhai Patel, Associate Professor from S.N.P.I.T. & Research Centre, Umrakh, Bardoli had shared his wide research experience during his research work at IIT-Kanpur, PRISME Laboratory-University of Orleans-France, Hanyang Univeristy-Seoul-South Korea and Korea Advanced Institute of Science and Technology-Daejeon-South Korea. The above webinar left strong impact on the mind sets of the participants in the field of Internal Combustion Engines.

Glimpse of Webinar

spray visualization
- Evaporating condition

Initial pressure: 4.17 MPa,
Initial temperature: 804 K,
Fuel injection pressure: 80 MPa

Expanding condition:
- Ambient pressure: 4.17 MPa
- Injection pressure: 80 MPa
- Injection duration: 100µs

Legend for spray images: Diesel, WCO, Karanja, Jatropha

Legend for graphs: Diesel, WCO Biodiesel, Karanja Biodiesel, Jatropha Biodiesel

Distillation Ratio [%]

Distillation Temperature [K]

- Diesel evaporated immediately after injection due to its higher volatility. On the other hand, biodiesels showed much slower vaporization than diesel.

NP

EG
EXPERT GECV

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1T

EFFECT OF CO₂ ADDITION ON SOOT

Condition / Time (ms)	1.022	1.2	1.289	1.378	1.467	1.556	1.6	1.689
0% CO ₂								
2% CO ₂								
4.5% CO ₂								
7% CO ₂								

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Engine combustion result - Start of combustion and smoke emissions

Setup: IIT Kanpur

- The **Jatropha** and **Karanja** biodiesels showed shorter ignition delay than conventional diesel and **WCO** biodiesel.
- In spite of oxygen content in biodiesel fuel molecule, soot emissions were deteriorated with **Jatropha** and **Karanja** biodiesel due to the poor spray characteristics.

EXPERT GECV ...

2%

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URMIL PATEL

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1%

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URMIL PATEL

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List of participants

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11	180190119035 RADHESHBHAI MAISURIYA
12	180190119105 PIYUSH TANDEL
13	180190119103 NIHAR TANDEL
14	180190119018 JIGAR DHANGAR
15	190193119024 KETULKUMAR TANDEL
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22	180190119047 AYUSH PATEL
23	180190119005 YASH BAROT
24	180190119075 SMITKUMAR PATEL
25	180190119080 YASH PATEL
26	170190119059 JIGARKUMAR PATEL
27	180190119049 BHAVESHREEBEN PATEL
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35	180190119091 NITIN RESHI
36	170190119123 NURALI WADHWANIYA
37	180190119051 DHROUVIL PATEL
38	180190119078 VIRAJKUMAR PATEL
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47	180190119009 AKSHAR BHAVSAR
48	190193119020 PRANAVKUMAR PATEL
49	180190119053 DIVYESH PATEL
50	180190119108 SACHIN TANDEL
51	180190119099 DIGESH TANDEL
52	180190119109 URVISHBHAI TANDEL
53	190193119002 ROHAN BADGUJAR
54	180190119107 RONAK TANDEL
55	180190119038 KEVIN MISTRY
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70	180190119120 PRAVIN VASAVA
71	180190119017 VISHWANG DESAI
72	180190119006 ADNAN BELAM
73	180190119034 ANILKUMAR MAHTO
74	190193119017 JACKKUMAR PATEL
75	180190119093 SANDEEPKUMAR SINGH
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93	180190119072 RONIT PATEL
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