UPES students develop Flex Fuel with Ethanol Blending

By OUR STAFF REPORTER

DEHRADUN, 1 Apr: With innovation at the core, the students at UPE Sare constantly pushing the boundaries of knowledge and engineering. One such groundbreaking project comes from a group of diligent students pursuing their BTech in Applied Petroleum Engineering - Gas, who embarked on a mission to redefine the future of fuel – the creation of Flex Fuel with Ethanol Blending.

Led by Pushpendu Sinha, Rishabh Kinger, Siddharth Raj, Vivek Negi, and Varun Singh Kushwaha, this visionary project is aimed at developing 'Flex Fuel', a versatile solution that combines the power of ethanol with traditional gasoline. The team meticulously crafted four grades of Flex Fuel – E10, E20, E30, and E40 – by blending ethanol with gasoline in varying proportions. E10 consists of 10% ethanol and 90% gasoline, while E20, E30, and E40 feature escalating ethanol concentrations alongside gasoline.

The benefits of Ethanol Blending are:

Environmental Sustainability - Ethanol, derived from renewable sources such as corn or sugarcane, significantly reduces greenhouse gas emissions compared to conventional gasoline. By integrating ethanol into the fuel mix, the project promotes cleaner combustion and contributes to mitigating climate change.

Energy Security - Flex Fuel offers a diversified energy source, reducing dependency on fossil fuels and enhancing energy security. Ethanol blending reduces reliance on imported oil, thereby bolstering national energy resilience and stability.

Economic Advantages - Ethanol production fosters economic growth by creating new revenue streams for farmers and promoting rural development. Moreover, Flex Fuel offers consumers greater fuel choice and potential cost savings, driving market competitiveness and economic prosperity.

This project exemplifies the transformative power of student-led innovation in addressing real-world challenges. Through rigorous research, experimentation, and collaboration, the students have not only developed a groundbreaking solution but also laid the groundwork for future advancements in alternative fuels and sustainable energy technologies.

UPES supports initiatives that foster creativity, critical thinking and hands-on learning. The state-of-the-art laboratories, expert faculty, and industry partnerships provide students with the resources and mentorship needed to turn ideas into reality.