

UNIVERSIDADE FEDERAL DA BAHIA

Programa de Pós Graduação em Engenharia Industrial

Biofuel Production and Processing - Towards Fossil-Fuel-Free Campus

A Pesquisa



O professor Emerson Sales, docente permanente do PEI, e pesquisadores da Pondicherry University (Department of Green Energy Technology - Índia) tem desenvolvido um método inovador e mais sustentável de conversão de óleo vegetal (resíduo doméstico e comercial) e óleo de microalgas em biodiesel, sem catalisadores químicos.

Essa pesquisa faz parte de um projeto financiado pelo órgão indiano - SPARC (Scheme for Promotion of Academic and Research Collaboration), intitulado: 'Novel Methods in Biofuel Production and Processing'. A equipe deste projeto é composta pelos professores B. M. Jaffar Ali, Prof. R. Arun Prasath (ambos do Dept. of Green Energy Technology - INDIA) e pelos professores Donato Aranda (UFRJ) e Emerson Andrade Sales (UFBA). Além da UFBA e da Pondicherry University, o projeto ainda envolve pesquisadores de institutos de pesquisa indianos, como Auroville Centre for Scientific Research (CSR), Environmental Monitoring Service e do Palmyra Centre for Ecological Landuse, Water Management and Rural Development.

A Tecnologia

A tecnologia de produção de biodiesel a partir de óleo vegetal ou de microalgas e bioetanol de algas (produzido via processo fermentativo) tem apresentado excelentes resultados nos recentes testes feitos em veículos na Índia. A demonstração tecnológica foi testada usando 100% de Biodiesel, 10% de mistura de biodiesel em diesel e 15% de mistura de etanol em gasolina. O professor Emerson projetou o reator em que o Biodiesel tem sido gerado a partir de resíduos (conceito lixo zero). Segundo o professor Emerson Sales, o processo de produção tanto do Biodiesel quanto do Bioetanol tem apresentado alta conversão, e os produtos apresentam grau de pureza, maior que 95% e 99% respectivamente, e baixo conteúdo (menor que 0,5%) de água/alcool no Biodiesel e água no bioetanol. O etanol residual do processo de Biodiesel ainda é recuperado e retornado ao processo de produção do próprio Biodiesel. Essa pesquisa voltada ao setor de Bionergia visa a produção de combustíveis renováveis que gerem benefícios mais amplos para a sociedade, como o fato de dar autonomia energética, serem neutros em termo da emissão de carbono, serem menos poluentes que combustíveis fósseis, serem capazes de integrar o setor energético sem comprometer a cadeia alimentar e impulsionar a economia através da geração de novos empregos e novos mercados.



Pondicherry University, Auroville demonstrate biodiesel production

Institutions develop catalyst-free method

SPECIAL CORRESPONDENT PONDICHERY
Researchers from Pondicherry University and Auroville, led by Professor Emerson Andrade Sales of the Federal University of Bahia, Brazil, have claimed to have developed a catalyst-free method of conversion of oil to biodiesel and produced high-quality biodiesel from waste cooking oil.



The team is working on ideas for large-scale production of biodiesel for community consumption in Auroville.

According to a press release, the concept involves high growth rate biomass feedstock development based on algae and zero-waste biodiesel synthesis possessing very minimal water and glycerol content.

According to Professor B.M. Jaffar Ali of the Department of Green Energy Technology of Pondicherry University, the biodiesel was used to power a pump on an organic farm at Kotakarai near Auroville. It was also used to run a generator at the laboratory of the Environmental Monitoring Service, Auroville, the release said.

Professor Sales said the

project used a novel method of oil-to-biodiesel conversion without catalyst. Pondicherry University has teamed up with the Auroville Centre for Scientific Research, the Environmental Monitoring Service and the Palmyra Centre for Ecological Land Use and Rural Development to further develop the technology for community use.

The research team is now working on ideas for large-scale production of biodiesel for community consumption in Auroville.

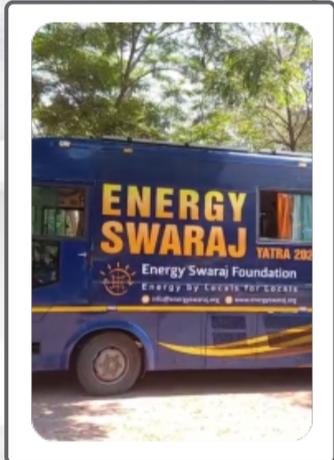
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வாகனத்தில் பயோ டீசல் நிரப்பி சோதனை



புதுச்சேரி பல்கலைக் கழகத்தில் வினையூக்கி இல்லாத பயோ டீசல் மூலம் வாகன பரிசோதனையை பேராசிரியர் தரணிக்கரசு துவக்கி வைத்தார்.

புதுச்சேரி, ஏப். 18-
புதுச்சேரி பல்கலைக் கழகத்தில் வினையூக்கி இல்லாத பயோ டீசலை வாகனங்களில் நிரப்பி சோதனை செய்யப்பட்டது. புதுச்சேரி பல்கலைக் கழக பகமை ஆற்றல் தொழில்நுட்ப துறை வினையூக்கி இல்லாத, துணை தயாரிப்பு இல்லாத பயோ டீசலை உற்பத்தி செய்துள்ளது. இதனை வாகனங்களில் நிரப்பி எரிபொருள் பரிசோதனை செய்யும் நிகழ்ச்சி கல்யாணி வளாகத்தில் நடந்தது. பேராசிரியர் தரணிக்கரசு செயல் வினக்கத்தை துவக்கி வைத்தார். தொடர்ந்து அம்பாசிபுர்தர், பைக்கில் புதிய தொழில்நுட்ப முறையில் பெராசிரியர் எம்ர்சன் ஆன்ட்ரேட், பேராசிரியர் கள் ஜார் அலி, அருண் பிரகாஷ், ஏழுமலை ஆகியோர் பங்கேற்றனர்.



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