



Thursday 5 November EU-India PARTNERING EVENT

PROFILE FORM

ORGANISATION DETAILS				
Organisation name		Pondicherry Engineering College		
Street *		Pillaichavady		
ZIP *	605 014	City *	Pondicherry	Country *
Phone *	09345156037	Fax	-	
Email *	rsaravanane@pec.edu	Web	www.rsaravanane.com	
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☒ 250 +
Organisation type	☒ University ☐ Research Center ☐ Industry ☐ SME ☐ Other			
Department	Environmental Engineering Division, Department of Civil Engineering			
Short description of your company/organization	Founded in the year 1985, Higher Education, Research and Development ; Research and developemnt in Enviornment and Energy Projects- climate and ground water augmentation. (1) Member of Risk Assessment -Advisory Structure of Scientific Committees and Expert set up by European Commission Decision - 2008/721/EC (Published in Official Journal of European Union, OJ L 49 20.02.2009, p. 33 (Copy of letter attached) (2)Research and Academic collaboration to INSA, Toulouse, France and University of Poitiers, France (2) Research collaboration to Wind, sea, algae forum, NASA- USA and Copenhagen, Denmark (www.algaepedia.org)			

PARTICIPANT			
Gender	☒ Mr	☐ Ms	Title Dr
First name	Raman		
Last name	Saravanane		
Position	Assistant Professor		

PARTNERSHIP PROPOSAL	
EU-India partnering event session participation:	
☒	<i>Sustainable production and management of biological resources from land, forest and aquatic environment</i>
☐	<i>Fork to farm: Food (including seafood), health and well being</i>
☐	<i>Life sciences, biotechnology and biochemistry for sustainable</i>
☐	<i>Health</i>
Areas of activity (Free keywords)	Sustainable clean production and Bioenergy

PROJECT DESCRIPTION	
Title of your research project in one sentence	Development of Hydrogen Production Technology from Renewable Industrial Waste Streams
Short description of project	At present, industrial grade hydrogen is produced by water hydrolysis, which needs huge amounts of electrical energy, or by steam reforming of natural gas or coal, needing high pressures and thermal energy from fossil fuels. Furthermore it aggravates the environment with CO₂ emissions. On the other side two main biotechnological paths have been proposed to obtain hydrogen: anaerobic (dark) fermentation and photosynthesis. Both require modest input of energy, ideally solar energy, and can potentially use organic wastes from industries as substrates for the microorganism cultivation, and thus partly contribute to the agenda of CO₂ sequestration and reduction in CO₂ emissions to 5 -10% below 1990 levels by 2020. This proposed method can enhance hydrogen production through recirculation of heat energy from waste heat streams generated from Nuclear, thermal power plants and Industrial units. The eco-efficiency of the biotechnological approach against conventional hydrogen production is quite promising
Description of expertise offered	The project's goal is validating the suitability of the Spanish patented Technology AFADS (Anaerobic, Phytodepuration, Aerobic, Solar Distillation) for the production of biohydrogen by dark fermentation. An AFADS system is a kind of compound bioreactor which, by means of solar energy, produces biogas by anaerobic digestion, clean water by phytodepuration with microalgae, and 3% of water naturally distilled by solar power. Once validated for hydrogen production, this technology could solve many environmental and energy problems both in rural India and Spain, and provide a new way of treating wastewater with null CO₂ emissions.

Description of requested partner expertise	Mr. Mario A. Rosato Director, Sustainable Technologies SL Parc Tecnologic del Vallés, 08290 Cerdanyola, Barcelona, Spain Activity: Engineering of the HAFADS system E-mail: m.rosato@sustainable-technologies.eu
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