**Developing a Photo-catalytic Reactor capable of improving the current treatment of Waste Water generated by Agricultural Industries and Fisheries**

*PCATDES is an ambitious collaborative project between the European Union of South East Asian Nations (ASEAN), financially supported by the European Commission under its Seventh Framework Programme, grant number 309846.*

The PCATDES Project combines 11 cross disciplinary teams from 7 ASEAN and EU countries. The consortium is focused on developing a cost effective, prototype photo-catalytic reactor with the capability of helping the agricultural and fisheries industries, based in less well developed and more remote areas, to clean and recycle waste water left over after current industrial and biological processes have been applied. The Project has been set the challenge of developing novel catalytic materials alongside new photo catalytic processes with the potential to assist target industries improve their waste water management.

The PCATDES project reached the mid-point of its 4 year period in January 2015 and the Second Annual Review Meeting was held in Istanbul on 15th and 16th February 2015. The meeting allowed Partners to: demonstrate progress; discuss technical matters face to face; consider management issues and plan for a successful outcome in 2017.

10 out of 11 Partners were able to attend the meeting, with representatives from the universities of Aston, Bath, Cardiff and UCL in the UK, and from the universities of Rey Juan Carlos and Rostock (Spain and Germany respectively). From the ASEAN countries representatives came from the Vietnam Academy of Science & Tech; SIRIM-Berhad (Malaysia); National Metal & Materials Technology Centre (Thailand). The meeting was hosted by Sampas Nanotechnology an SME, based in Istanbul. Dr Silvia Gross also attended the meeting in her capacity as the Project's EC Technical Officer.

The meeting heard that good progress is being made against the PCATDES work plan. URJC has built and fully characterised a prototype reactor, incorporating a light sources consisting of ultra-violet LEDs developed by Bath. The reactor is now in operation in the laboratories of 10 out of the 11 partners. Novel catalytic materials have been created along with catalytic structures and coatings and kinetic and mechanistic studies are also underway. Project Coordinators, Cardiff University and Aston University, are pleased with not only the scientific progress but also the positive collaboration involving partners spread around the globe. Sampas Nanotechnology, Turkey is responsible for business planning; dissemination and potential IPR and future exploitation resulting from the project and business invited a Turkish Olive Oil Producer, Mr Buğra Onal to present to the meeting on the waste water challenges facing his Industry. There is a striking similarity between the issues faced in Turkey, Greece and Spain with olive oil production and those encountered by palm oil producers in Malaysia and Fisheries in Vietnam.

Looking forward, the PCATDES project has to consider the design, including lighting, of a scaled up reactor that will be built and deployed in Malaysia. This decision will also see the project choose the best, cost effective catalysts; coatings and architecture.

The PCATDES Project looks forward to testing a scaled up photo catalytic reactor in the 'Field'. However, its chance of success is dependent on many factors outside of its control, such as, Government legislation; industrial practices and the effectiveness (or otherwise) of current systems to clean the water of sufficient contaminants before photo catalysis is applied.

For more information please visit: http://www.pcatdes.eu