

Press release

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Novel wastewater treatment technologies recognised



The European Federation of Chemical Engineering (EFCE) has announced Dr. Ignacio Sirés Sadornil as the latest winner of the *Carl Wagner Medal of Excellence in Electrochemical Engineering* for his exceptional research career in electrochemical wastewater treatment.

Organic pollutants in wastewater streams can cause major problems for industry, such as pollution from dye residues presents a challenge for the textile industry. If left untreated, the wastewater can cause groundwater pollution and ruin farmland¹.

Dr. Sirés, a senior researcher and lecturer at the University of Barcelona, won the award in recognition of his work on the development of effective and economical treatment technologies for wastewater contaminated with dye, pesticide and pharmaceutical residues.

Since starting his research career in the early 2000s, Sirés' work has focussed on the development of electrochemical advanced oxidation processes (EAOPs) for water decontamination, in particular organic pollutant degradation. This new technology is based on electro-Fenton reaction chemistry.

Fenton chemistry refers to the oxidation of organic compounds by free radicals generated by the reaction of hydrogen peroxide with an iron catalyst. The work of Sirés has developed electro-Fenton processes, generating the hydrogen peroxide *in situ* by electrochemical reduction of oxygen.

Professor Manuel Rodrigo, *Chair of the EFCE Working Party on Electrochemical Engineering*, which nominates the medallists, says: "Dr. Sirés' research, on the development of novel electrochemical wastewater treatment technologies, has the potential to be scaled up and applied at full scale in industry.

"He has addressed the optimisation of technology in terms of cost, reactor design and developed a deeper understanding of advanced nanostructured electrode materials for

organic pollutant degradation. This is the thinking that contributed to our decision to award the *Carl Wagner Medal* to Dr. Sirés.”

Dr. Sirés, on winning the medal, said: “What a wonderful surprise, I feel really proud to receive such a prestigious award! It adds to the many experiences I have enjoyed with other researchers abroad, who have had a huge impact on my views of science and technology.

“Within my field, I am noticing increasing attention towards the engineering aspects of environmental electrochemistry, which may help us make even more progress. This makes me particularly happy because the interplay of both fields will demonstrate the great effectiveness and viability of electrochemical water treatment technology.”

The Excellence award – comprising of a €1,250 cash prize and certificate – will be presented to Sirés at the 10th *European Symposium on Electrochemical Engineering* (ESEE) in Sardinia, Italy. The conference will take place on 28 September – 2 October 2014.

Ends

Related links

[EFCE media centre](#)

[Carl Wagner Medal of Excellence in Electrochemical Engineering](#)

[European Symposium on Electrochemical Engineering](#)

Notes to media:

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About chemical engineers

Chemical, biochemical and process engineering is the application of science, maths and economics to the process of turning raw materials into everyday products. Professional chemical engineers design, construct and manage process operations all over the world. Oil and gas, pharmaceuticals, food and drink, synthetic fibres and clean drinking water are just some of the products where chemical engineering plays a central role.

About EFCE

Founded in 1953, The European Federation of Chemical Engineering (EFCE) is a non-profit-making association, whose object is to promote co-operation in Europe between non-profit-making professional scientific and technical societies in 30 countries for the general advancement of chemical engineering and as a means of furthering the development of chemical engineering. See www.efce.org

Reference

¹ Clothing to dye for: the textile sector must confront water risks:

www.theguardian.com/sustainable-business/dyeing-textile-sector-water-risks-adidas