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SPEA9 Abstract book • Strasbourg • June 13-17 • 2016

Abstract book



organizing chair Nicolas Keller
organizing co-chair Didier Robert

9th European meeting
on Solar Chemistry and Photocatalysis:
Environmental Applications

Strasbourg • June 13-17 • 2016

Welcome to SPEA 9

On behalf of the Organizing and Scientific Committees, it is our great pleasure to welcome you to the 9th European meeting on Solar Chemistry and Photocatalysis: Environmental Applications (SPEA), held on June 13 – 17 2016, in Strasbourg, France, symbolic capital of Europe, and seat of several major European institutions.

Launched in 2000 and 2002 in Saint-Avold, France, the European meeting series SPEA progressively gained over the last 15 years its renown among the most relevant meetings in solar chemistry and photocatalysis by travelling around Europe. Hosted in Barcelona (2004), Gran Canaria (2006), Palermo (2008), Prague (2010), Oporto (2012) and Thessaloniki (2014), SPEA takes place in Strasbourg in 2016.

The ambition of the four-day SPEA9 meeting is to report on the most advanced research progresses in environmental photocatalysis and photochemistry, and to pave the way for future research and challenges.

For facing actual challenges and addressing major societal concerns on environment, sustainable chemistry and energy, SPEA9 offers a lively and convivial share platform to senior and younger researchers, PhD students as well as companies involved in Solar chemistry and Photocatalysis.

We truly hope that the SPEA9 program will reflect the high commitment and exceptional profile of the international community working in this field, and selected papers will be published in *Catalysis Today*, *Photochemical & Photobiological Sciences*, *Environmental Science and Pollution Research* journals following the SPEA meeting.

Finally, lovers of good food, monuments and entertainment be warned: you are very probably going to fall in love! Strasbourg is definitely well worth a visit, to discover its history, its cuisine and its unique atmosphere. Organised around its monumental cathedral, thanks to the richness and sheer density of its heritage sites, the historic Big Island of Strasbourg listed as UNESCO World Heritage since 1988, contains a remarkable monumental ensemble and exemplifies medieval cities with tight network of streets as well as reflects the evolution of Strasbourg from the 15th to the 18th centuries.

Outside Strasbourg, the Alsace region at the crossroads of Europe, offer a strongly diversified touristic playground, essentially based on two pillars: gastronomy and wines, as well as the heritage, whether natural and environmental, or cultural.

For a day, a weekend or for a stay after SPEA, be tempted and discover Alsace!

We are very much looking forward to welcome you in June 2016 to our beautiful city of Strasbourg!

On behalf of the Organizing and Scientific Committees,

Nicolas Keller, Organizing chair

Didier Robert, Organizing co-chair

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SPEA president

Didier Robert, France

SPEA 9 Organizing Chair

Nicolas Keller, ICPEES, Institute of Chemistry and Processes for Energy, Environment and Health, CNRS, University of Strasbourg, France

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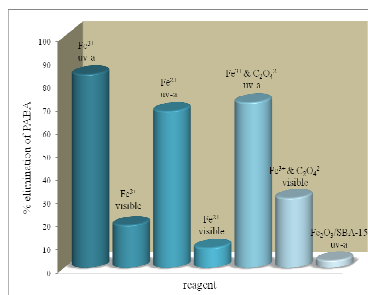
Marion Oswald

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Homogeneous Photocatalytic Degradation Of UV Filter PABA. Kinetics, Degradation Pathways And Ecotoxicity Evaluation.

P-118

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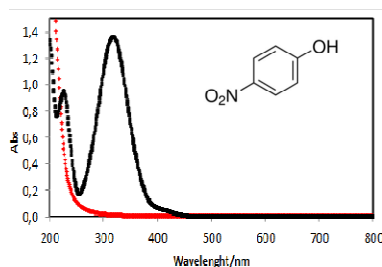
Elimination of PABA within 30 min, in the presence of photo-Fenton, ferrioxalate and heterogeneous Fenton-like reagents under artificial UV-A and visible irradiation (initial conditions: 0.02 g L⁻¹ PABA)

The presence of personal care products' (PCPs) residues in the aquatic environment is an emerging issue due to their uncontrolled release, through grey water, and accumulation in the environment that may affect living organisms, ecosystems and public health. As a result, efforts are being made to develop methods to inactivate or eliminate this class of substance in the environment. The homogeneous photocatalytic degradation of UV-filter para-aminobenzoic acid (PABA), one of the components that is present in many types of PCPs, has been investigated in aqueous solutions using artificial illumination, in order to identify the optimum system that should be applied to the further investigation of the treatment of grey water.

A comparative study of doped lanthanum ferrites photocatalysts for the degradation of 4-Nitrophenol under visible-light irradiation

P-119

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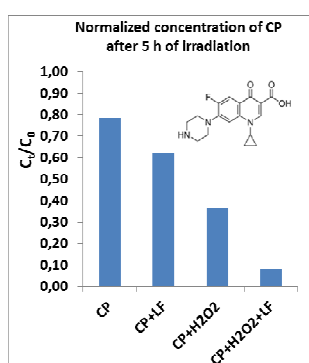
The objective of this work is to assess the photocatalytic efficiency of LaFe_{1-x}M_xO₃, where M = Cu, Ga, Mg nanopowder in presence of H₂O₂ to degrade aqueous pollutants under visible-light irradiation. The photocatalytic activity was tested on 4-Nitrophenol (4-NP), which is a compound representing an important group of water pollutants. The higher degradation rate was found using 10 mol% Cu-doped LaFeO₃.

UV-Vis absorption spectra of a 4NP aqueous solution before irradiation (black line) and in presence of H₂O₂ and LaFeO₃ after 6h of visible-light irradiation (red line).

Fast photocatalytic degradation of pharmaceutical micropollutants and ecotoxicological effects

P-120

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Aqueous solutions of ciprofloxacin and ibuprofen in the presence of LaFeO₃ photocatalyst, of H₂O₂, and both LaFeO₃ and H₂O₂, were irradiated under visible-light. It was found that for short irradiation time (5 h) the degradation rate was enhanced by the simultaneous addition of small amounts of LaFeO₃ and H₂O₂. Moreover, aquatic toxicity tests were also performed: the degradation products of ciprofloxacin and ibuprofen induced toxic effects on aquatic organisms indicating incomplete detoxification after 5 h irradiation.