FineCat 2012
Symposium on heterogeneous
catalysis for fine chemicals

April 18-19, 2012
Palazzo Steri, Palermo, Italy

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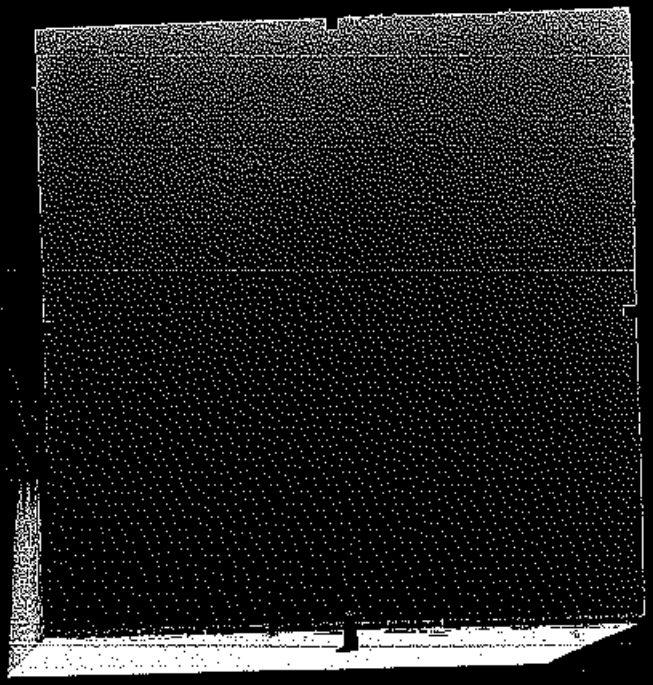

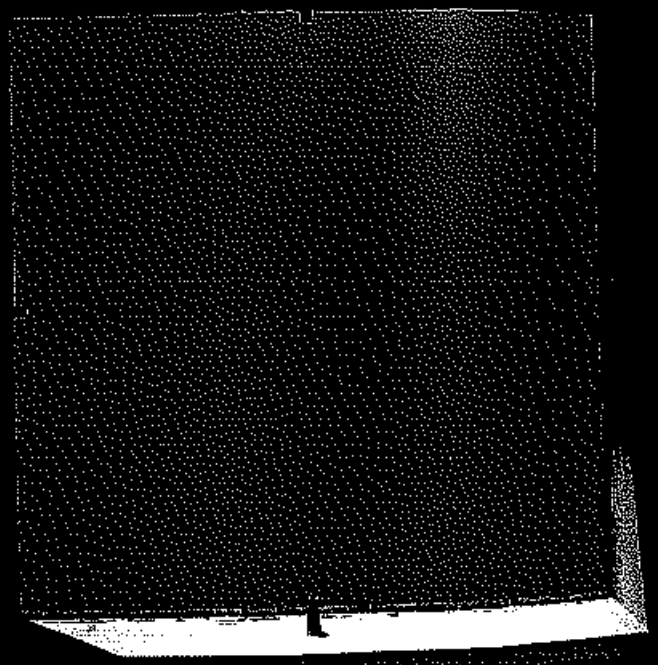

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Dear Colleague,

On behalf of Italy's chemical community we are happy to welcome you for the 1st edition of the "FineCat 2012 - Symposium on heterogeneous catalysis for fine chemicals" that will be hosted in the splendid Steri Palace, hall of Palermo's University Rectorate, on April 18-19, 2012.

We wish to thank the University of Palermo, and in particular the Rector Roberto Lagalla, for hosting the meeting in this magnificent venue

The scientific program features 14 symposia and 5 poster presentation that will highlight exciting innovation from theoretical through practical approaches including predicting catalyst performance, gold catalysis for selective oxidations, heterogeneous asymmetric syntheses, bio-hydrogen production, doped hybrid silicates and photocatalysis for organic synthesis.

Younger and more experienced scientists were chosen in a good balance to present and discuss advances in the field, whereas eminent scientists Graham Hutchings from Cardiff University and Gadi Rothenberg from the University of Amsterdam will give the conference plenary lectures.

Hopefully, the beauty of the city, crossroad of the Phoenician, Roman, Arab and Norman civilizations, will be the right setting for this novel scientific event, whereas Sicily's city of Marsala will be a similarly appropriate venue for the Symposium social program.

Enjoy the meeting and your stay!

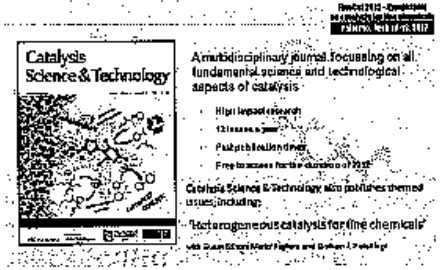
Mario Pagliaro and Leonardo Palmisano
Chairman and Co-Chairman of FineCat 2012

The Symposium

Fine chemicals generally are polyfunctional molecules with specific properties imparting them high added value. Hence, in general, they require highly selective synthetic methods that in most cases are homogeneous, stoichiometric processes.

Heterogeneous catalysis, however, is eventually emerging as a valuable tool in making the fine chemicals industry environmentally and economically more sustainable.

Much has changed since 2003 when Cole-Hamilton [1] lamented that only a few homogeneous Rh catalysts were known to have found practical application and practically *no* heterogenized homogeneous catalysts.



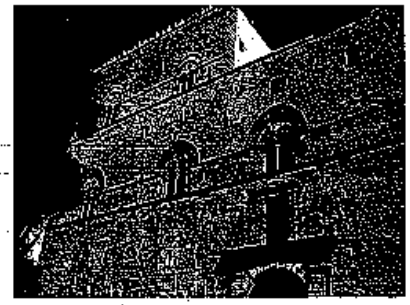
A decade later, a number of commercial processes exist that use highly efficient and selective new solid catalysts.

Research in heterogeneous catalysis for fine chemicals synthesis, preparative chemistry and drugs discovery, is currently more active than ever before. One can now truly speak about heterogeneous molecular and metal catalysis for fine chemicals as being among the main field of contemporary chemical research.

Showcasing the work of some the leading researchers in the field, the FineCat 2012 Symposium will cover some of the latest developments in the field and will provide good learning and networking opportunities.

[1] *Science* DOI: 10.1126/science.1081881

Conference Location and Social Program

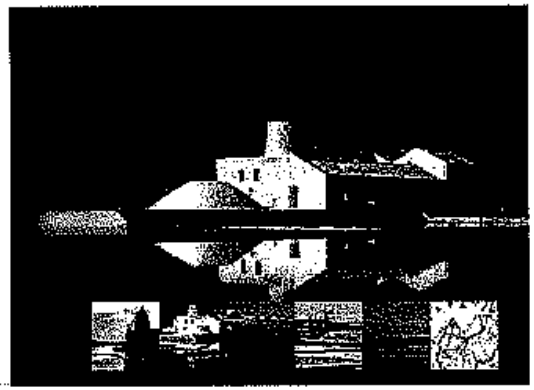


The Steri Palace (*photo*), the conference venue, is one of the most representative and beautiful medieval buildings in Palermo.

After it was built in 1306 by the Chiaramonte family, it became the seat of the Sicilian viceroys and subsequently also of the Spanish Inquisition.

The word "Steri" derives from the Latin word "Hosterium", for fortified palace. The mansion still reflects the various steps of the Sicilian history: the splendid painted wooden ceiling in the "Sala Magna"on the second floor, the loggias, the graffitis left by the prisoners, now restaured and in display in the "Sala delle armi", the "Capriate" Room and the beautiful Painting of "Vucciria" by the Sicilian 20th century painter Renato Guttuso.

In the afternoon of April 19th, delegates will be able to take part into a social excursion aimed to reach Marsala, about 110 km away from Palermo.



Along the road that runs to Marsala, skirting the lagoon "lo Stagnone", it will be possible to see numerous dazzlingly hills of salt, one of the Sicilian economy's historical resources that was already very precious in the days of the Phoenicians, who were the first to produce salt from marine water.

Delegates will be able to visit the mounds of salt topped by a series of recently restored windmills (*photo*) recalling the days when they were among the main instruments for pumping water and grinding the salt.

The favourable climatic circumstances, such as high temperatures and a wind that increases evaporation, plus the shallowness of the water, contribute to create the evocative scenario created by the salt flats, which form a sort of chessboard that ranges in colour from pale green to pink.

The social dinner will take place in the cellars of Marsala's "Cantine Florio", known throughout the world for marsala wine, dessert and fortified wines. Erected by the entrepreneur Vincenzo Florio in 1832, these cellars reflect the style of Anglo-Saxon period, with large arches and floor "beat" of dust tuff.

Organizing Committee: Catalysis and solar energy research in Sicily

The research Labs of Leonardo Palmisano at the University of Palermo and of Mario Pagliaro at Palermo's CNR have developed and now operate a up-to-date, well-equipped units with active research programmes covering new catalytic materials, fine chemicals, solar energy and solar fuels.

Studies are often done in collaboration with Industry and other academic centres both in the Italy and abroad.

Highlights of recent work include the synthesis of new types of platinum and palladium catalysts for organic synthesis (*photo*); the use of sunlight for hydrogen production; and novel titania-based catalysts both for pollution abatement using sunlight and for selective oxidation.

Blessed with plentiful sunshine, Sicily is one of the first Europe's region that has already reached the "grid-parity", namely the point at which the price of solar electricity equals that of power purchased from the grid. Since 3 years, the island is experiencing a prolonged boom in both major domains of the solar energy industry -- PV and solar thermal.

In this context the same research groups above teamed up in 2008 to establish Sicily's PV Research Pole, a research and educational center in solar energy whose educational and research activities have resulted in a numer of achievements.

CONTRIBUTORS

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THE DURABILITY OF INNOVATIVE CEMENTITIOUS COATINGS: PHOTOCATALYTIC ACTIVITY AND COLOUR

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Today, in a world context characterized by high pollution levels and increasingly limited natural resources, even in the building sector, focusing on environmental issues, through energy saving and a more rational use of these resources, both during construction and management, is fundamental. An important contribution in this direction is given by the knowledge of the durability of products and building components, especially when innovative products are applied and no information are available on the reliability and service life. The research concerns the evaluation of the durability of cement-based photocatalytic coatings ("rasanti" in the Italian diction), containing different types of pigments, used for the external finishing of the buildings envelope and applied in low thicknesses on different supports. These products were prepared using photocatalytic cements by Italcementi (TXActive®). The investigated aspects are: the photocatalytic properties, conferring self-cleaning attitude and reduced maintenance to the treated surfaces, and the colorimetric ones, meaning the conservation of colour and giving aesthetic quality to the building envelope. Some results are reported, performed according to the ISO 15686 methodology, aimed at defining the Reference Service Life, through accelerated ageing tests in climatic chamber and the corresponding monitoring of photocatalytic and colorimetric properties. The lab activity was based on 6 cycles of accelerated ageing induced to the samples by the alternation of varying conditions of temperature (2 to 70°C), humidity (0 to 100%), rain and UV radiation. The photocatalytic activity measurements were carried out according to the UNI 11247-2010, in terms of NOx abatement capability, as shown in Fig. 1. The colorimetric measurements were taken on the CIELAB colour space and Fig. 2 shows the results of the monitoring of colour, by spectrophotometer, in terms of Colour Difference (DE*ab) variation. The comparison between the graphs shows an interesting relationship between the two monitored parameters.

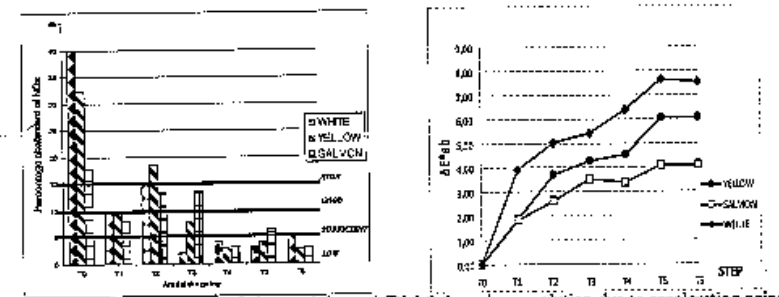

Fig. 1-2. (Left) The evolution of photoactivity and (Right) the colour evolution due to accelerating aging

INDEX OF AUTHORS

The presenting author of a contribution is indicated by bold and underlined letters.