SuNEC 2013: There is Enough Sun for All Mario Pagliaro¹

Jointly organized by the Institute of Nanostructured Materials of Italy's Research Council (CNR) and by Palermo's University Department of Electrical Engineering (DEIM), the third "SuNEC – Sun New Energy Conference" was held in Santa Flavia, Sicily, on September 10-12, 2013.

The SuNEC 2013 meeting covered some of the latest developments in the solar energy science and technology within one of the Conference themes. RSC Publishing *Energy and Environmental Science*, the leading scientific journal in the field, was the conference official publication and will accept manuscripts from SuNEC 2013 for peer-review, until September 30th.

SuNEC 2013

Sun New Energy Conference

September, 10-12 2013 Santa Flavia, Sicily, Italy



www.solar-conference.eu



Invited speakers at SuNEC 2013

included Yu A. Baurov (Russian Academy of the Sciences), Wai-Yeung Wong (Hong Kong Baptist University) Antonino S. Aricò (CNR, Italy), Francesco Meneguzzo (CNR, Italy) as well as novelist and thinker Ottavio Cappellani (Catania, Italy).

The scientific programme featured 6 plenary lectures, 14 oral presentation and 4 poster presentation that highlighted relevant innovation ranging from different approaches to exploit solar energy, including concentrated solar power (CSP), thin-film photovoltaics, artifical photosynthesis and solar thermal.

The Conference scientific program opened on time on September 10th, with the opening lecture of Professor **Wai-Yeung Wong** who addressed the audience describing the latests developments in organometallic photovoltaics using polyplatins and many other polymers for harvesting solar energy.

On the same day, **Adriano Sacco**, a young researcher at Italian Institute of Technology), Metal Oxide Nanostructures and Quasi-Solid Electrolytes for Dye-Sensitized Solar Cells.

Professor **Yu A. Baurov** (Russian Academy of the Sciences and Closed joint stock Company Research Institute of Cosmic Physics) gave a fascinating talk describing coupling of the new Nature force emerging from the buyon's theory. He described the basics of the theory explaining, for example, how on August 6th this cosmic force reactivates after a temporal window of little or no evidence.

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Post-doctoral researcher Giovanni Palmisano (CNR, Italy): Photocatalysis for Synthetic Organic Chemistry.

Andrea Tucci (Bitlux, Italy): A Loss Recovery Solution for Hybrid Photovoltaic and Lighting Systems

On September 11th, Dr Francesco Meneguzzo (CNR, Firenze, Italy) A New Traction Force for Boats and Navigation.

Antonino S. Aricò (CNR, Messina, Italy): Solar Driven Electrochemical Conversion of CO2 PL-4

Waseem Amjad (University of Kassel, Germany): Design, development and experimental results of a solar based distillery for the essential oils extraction from medicinal plants OP-4

Giandomenico Caridi (SpA Navicelli, Italy): Revamping of the Pisa Shipyards into an Ecologically Equipped Productive District (APEA) OP-5

Carmelo Albeggiani (Medielettra, Italy): A Study on the Grid Parity in Sicily

Carmelo Albeggiani of Italy's Medielettra solar company, presented the development of PV energy in Sicily and offered a useful "real-life" insight from the market.

On September 12th Ottavio Cappellani (Catania, Italy): The End of the Culture of Oil: Rethinking Our Society Model in Time.

Luca Degiorgis (Polytechnic of Turin, Italy): Economic evaluation of multipurpose solar thermal systems in Italy OP-7

The Poster session saw contributes from Sergei Manakov (Al-Farabi Kazakh National University, Kazakhstan): Optical Optimization of Thim Film Solar Cells PO-1

Mariarita Girolamo (CNR, Messina, Italy): Investigation of Carbon Nanofibers as Counter Electrodes in Dye Sensitized Solar Cells PO-2

Svetlana Lukić-Petrović (University of Novi Sad, Serbia): Photoinduced Changes on Thin Chalcogenide Films with Copper PO-3

Giovanni Palmisano (CNR, Italy): Visible-Light Driven Oxidation of Gaseous Aliphatic Alcohols to the Corresponding Carbonyls via TiO2 Sensitized by a Perylene Derivative PO-4

The poster prize was awarded to **Orhan Özdemîr**, Yıldız Technical University, Turkey, for his poster concerning the structural analysis of the interface properties of inversed HIT solar cells

Francesco Meneguzzo, Institute of Biometeorology, CNR, Italy, reported the first results of using heating systems for buildings and greenhouses using PV electricity to heat water at temperatures up to 90 °C through cavitation based on Baurov theory of buyons. Such easily assembled systems, recently patented along with Professor Baurov, do not use coils or traditional resistance, but rather employ cavitation of water bubbles that going through a cycle path, including a vertical part, release a considerable amount of energy.

Dr Meneguzzo, the father of Italy's FiT scheme, showed the results of both experimentation and simulation concerning the application of this PV-powered thermal system in greenhouses, where some 1,100 liters of diesel fuel are currently needed to grow valued vegetable. The system is capable to conveniently provide all the heat needed to replace diesel fuel in both southern, central and northern Italy.

Finally, the social program organized on the afternoon and evening of September 5th was, to quote the wife of Professor Schropp, "unforgettable". With assistance of a guide, delegates first explored the ancient Norman town of **Cefalù**. One of the better kept examples of Norman architecture, this town is famous for its two storey Cathedral whose building's interior decorated with splendid gold mosaics date back to 1138.

On the evening of the same day a banquet dinner based on time-honoured Sicilian recipes was served at the **Abbazia Santa Anastasia**, a luxury resort next to a large winery. Delegates first visited the *cantina* and then enjoyed Sicilian specialties matched with the excellent wines from the very same winemaker.

Scientifc exchange and networking was certainly eased by the informal style of the Conference along with the unique *milieu* of both the Conference location in front of Sicily' sea and the Abbazia Santa Anastasia, in a proper balance between science, networking and entertainment.

The 4th edition of the SuNEC Conference will be held in Sicily again, on September 2013. Interested scientists can easily register online at <u>www.solar-conference.eu</u>