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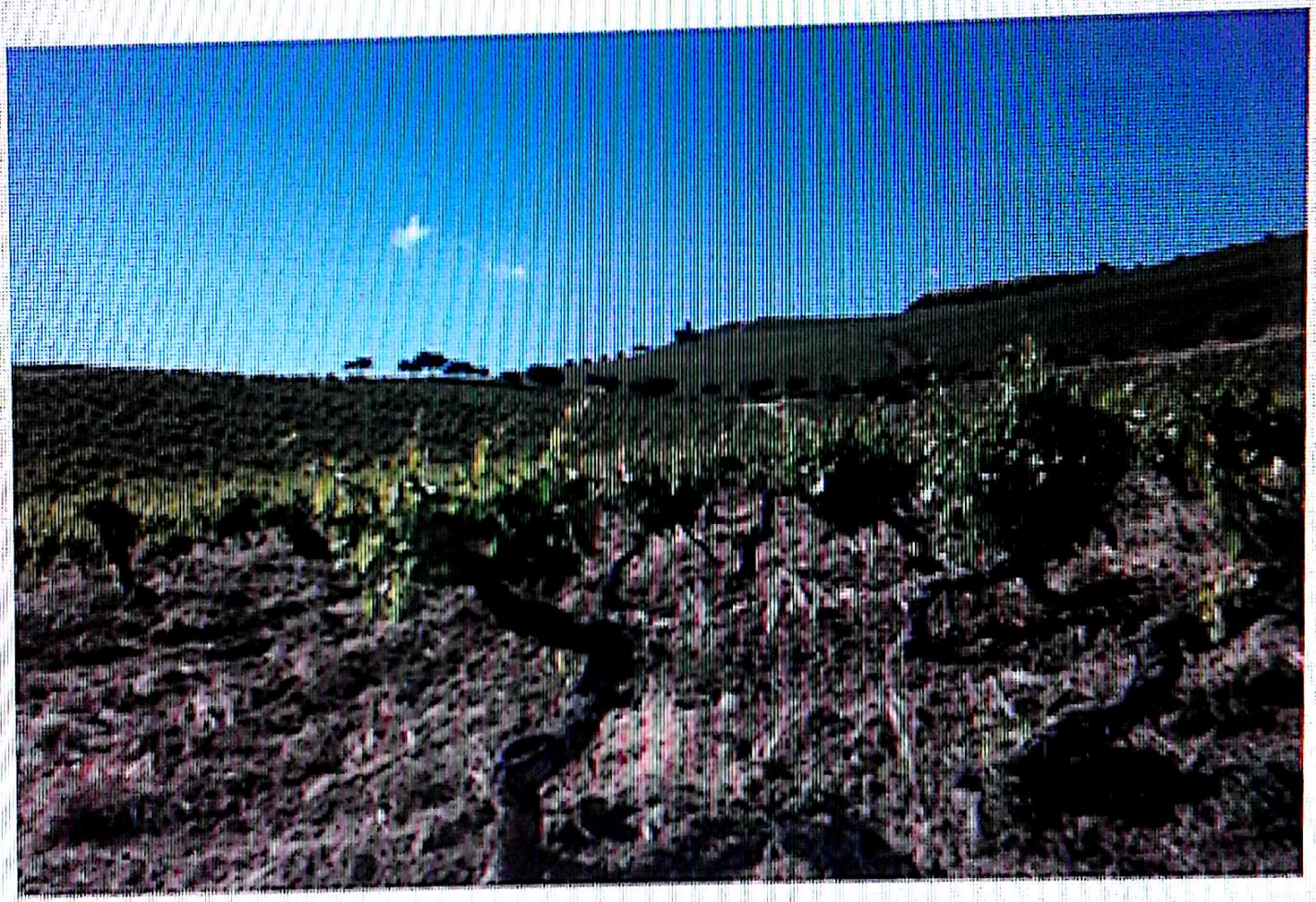

Oral Presentation

HETEROGENEOUS PHOTOCATALYSIS FOR GREEN SYNTHESIS

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Heterogeneous photocatalysis by polycrystalline semiconductor oxides is an unconventional chemical technology that has been applied mainly to degrade organic and inorganic pollutants both in vapour and liquid phase. It is generally accepted that TiO_2 is the most reliable photocatalyst, due to its low cost and (photo)stability under irradiation. Applications of photocalysis for synthetic purposes are rare especially by using water as the solvent. The reasons can be found in the fact that (*i*) the titania-mediated photocatalytic reactions are unselective processes as the presence of induces the production of unselective highly oxidant •OH radical species, whereas (*ii*) many organic molecules (reagents and/or products) are poorly or not soluble in water. In the last decade, newly developed titania-based photocatalysts and reaction conditions have resulted in a number of relevant applications of heterogeneous photocatalysis to synthetic organic chemistry. We present selected examples from our and other Laboratories.

Francesco Parrino (1982) graduated at the University of Palermo Palermo in 2005 in Chemical Engineering *cum laude* and got a PhD in Inorganic Chemistry in 2009 at the Friedrich-Alexander University of Erlangen-Nürnberg (Germany) with a dissertation on photocatalytic synthesis of sulfonic acids through alkane activation. He is currently research fellow at the University of Palermo. His research deals with the preparation and characterization of

photocatalysts for degradation of pollutants and for green synthesis of organic molecules. He is co-author of numerous research papers and communications in international conferences on these topics.