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Prof. Dr. Redel-Macías graduated from the University of Cordoba, Spain, in Automatic and Electronic Engineering. She followed this with an master in management of maintenance (University of Sevilla, Spain), and a PhD in Automatic and Electronic Engineering. She was appointed Lecturer in the Dep. of Rural Engineering at the University of Córdoba, and she passed the tenure to become professor (*profesor titular de escuela universitaria*) at the University of Córdoba in 2013. She has been heavily involved with several academic organizations, i.e. the staff meeting of University of Córdoba (2010-2014), the Association of Researchers and Professors of the University of Córdoba (2010-2014), and the Spanish Association of Engineering Project (since 2012). She teach in several master degree program of University of Córdoba as Engineering master degree and Risk Prevention in the workplace master degree. She belong the research group BIOSAHE since 2010. She is responsible for more than 20 research and teaching publications, including national and international contributions, several books chapters, editor of several books and several patent application (software). She is currently supervising 3 PhD students.

During her career, Prof. Dr. Redel-Macías has been a regular contributor t major national and international conferences. This year she is participating on the organization of International Conference on renewable energy adn power quality that will be held the next month in Córdoba. She has participated in a number of Spanish Ministry funded projects.

### **Research**

The research activities of the "Biofuels and energy saving" (BIOSAHE) research group have been directed towards the application of process engineering concepts to new renewable alternative fuels for internal combustion engines and energy efficiency. Moreover, much of this work is being undertaken to investigate exhaust and noise emissions, and engine performance working on biofuel considering the influence of the chemical properties of biodiesel on sound quality.

### **Selected recent publications (past five years):**



Cruz F, Palomar JM, Dorado MP, Casanova P, Manzano-Agugliaro F, Characterization of solar flat-plate collectors, *Renewable & Sustainable Energy Reviews*, 2011 (DOI: 10.1016/j.rser/2011.11.025)

Pinzi S; Alonso F; García-Olmo J; Dorado MP, Near infrared reflectance spectroscopy and multivariate analysis to monitor reaction products during biodiesel production, *Fuel* 92: 354-359, 2012

Pinzi S, Leiva D, Arzamendi G, Gandia LM, Dorado MP, Multiple response optimization of vegetable oils fatty acid composition to improve biodiesel physical properties, *Bioresource Technology* 102:7280-7288, 2011

Dorado MP, Pinzi S, de Haro A, Font R, Garcia-Olmo J, Visible and NIR Spectroscopy to assess biodiesel quality: determination of alcohol and glycerol traces, *Fuel* 90: 2321-2325, 2011

Torres-Jimenez E, Dorado MP, Kegl B, Experimental Investigation on Injection Characteristics of Bioethanol-Diesel fuel and Bioethanol-Biodiesel blends, *Fuel* 90: 1968-1979, 2011

Torres-Jimenez E, Svoljšak-Jerman M, Gregorc A, Lisec I, Dorado MP, Kegl B, Physical and chemical properties of ethanol-diesel fuel blends, *Fuel* 90: 795-802, 2011

Pinzi S; Mata-Granados JM; Lopez-Gimenez FJ; Luque de Castro MD; Dorado MP, Influence of vegetable oils fatty acid composition on biodiesel optimization, *Bioresource Technology* 102: 1059-1065, 2011

Pinzi S; Gandia LM; Arzamendi G; Ruiz JJ; Dorado MP, Influence of vegetable oils fatty acid composition on reaction temperature and glycerides conversion to biodiesel during transesterification, *Bioresource Technology* 102: 1044-1050, 2011

Pinzi S, Dorado MP, Vegetable-based feedstocks for biofuels production, *Handbook of biofuels: processes and Technologies* 61-94, 2011, Woodhead publishing (Cambridge, UK)

Pinzi S, Lopez-Gimenez FJ, Ruiz JJ, Dorado MP, Response surface modeling to predict biodiesel yield in a multi-feedstock biodiesel production plant, *Bioresource Technology* 101(24): 9587-9593, 2010

Lapuerta, M; García-Contreras, R; Campos-Fernández, J; Dorado MP, Stability, lubricity, viscosity and cold flow properties of alcohol-diesel blends, *Energy & Fuels* 24: 4497-4502, 2010



Torres-Jimenez E, Svoljšak-Jerman M, Gregorc A, Lisec I, Dorado MP, Kegl B, Physical and chemical properties of ethanol-biodiesel blends for diesel engines, *Energy & Fuels* 24: 2002-2009, 2010

Cruz-Peragon F, Jiménez-Espadafor FJ, Palomar JM, Dorado MP, Influence of a combustion parametric model on the cyclic angular speed of internal combustion engines. Part II: statistical sensitivity assessment results, *Energy & Fuels* 24: 954-964, 2010

Lopez FJ, Pinzi S, Ruiz JJ, Lopez A, Dorado MP, Economic viability of the use of olive tree pruning as fuel for heating systems in public institutions in South Spain, *Fuel* 89: 1386-1391, 2010

R Luque, S Pinzi, JM Campelo, JJ Ruiz, I Lopez, D Luna, JM Marinas, AA Romero, MP Dorado, Biofuels for transport: Prospects and challenges, in *Emerging Environmental Technologies II*: 171-210, 2010, edited by Prof. Vishal Shah, published by Springer Netherlands

Cruz-Peragon F, Jiménez-Espadafor FJ, Palomar JM, Dorado MP, Influence of a combustion parametric model on the cyclic angular speed of internal combustion engines. Part I: setup for sensitivity analysis, *Energy & Fuels* 23: 2921-2929, 2009

Dorado MP, Lin SKC, Koutinas A, Du Ch, Wang R, Webb C, Cereal-based biorefinery development: Utilisation of wheat milling by-products for the production of succinic acid, *Journal of Biotechnology* 143: 51-59, 2009

Pinzi S, Garcia IL, Lopez-Gimenez FJ, Luque de Castro MD, Dorado G, Dorado MP, The ideal vegetable oil-based biodiesel composition. A review of social, economical and technical issues, *Energy & Fuels* 23:2325-2341, 2009

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Dorado MP, Raw Materials to Produce Low-Cost Biodiesel, In: *Biofuels refining and performance*: 107-148, 2008. McGraw-Hill Higher Education.

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Dorado MP, Cruz F, Palomar JM, López FJ, An approach to the economics of two vegetable oil-based biodiesel in Spain, *Renewable Energy* 31: 1231-1237, 2006

Yuste AJ, Dorado MP, A neural network approach to simulate biodiesel production from waste olive oil, *Energy & Fuels* 20: 399-402, 2006