

C.V. SUMMARY – SILVIA IRUSTA

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Education

- B. Sc. in Chemical Engineering, University of El Litoral, Argentina, 1986.
- Ph.D. in Chemical Engineering, University of El Litoral, Argentina, 1994.

Employment

Current :

- Professor at University of Zaragoza.
- Member of the Institute of Nanoscience of Aragon.
- Member of the *Nanostructured Films and Particles* Research Group

Previous:

- 1989-2004 Professor of Thermodynamics. Faculty of Chemical Engineering, University of Litoral, Argentina.

Research interests

Current:

- Surface characterization of solids by XPS and FTIR spectroscopies.
- Polymeric nanocomposites.
- Synthesis of inorganic nanoparticles, nanotubes and nanofibers.
- Synthesis of lanthanide doped TiO₂ nanoparticles.
- Nanosafety.

Publications

60 refereed publications. Last 3 years:

1. L. Pérez-Moreno, S. Irusta, J. Soler, J. Herguido and M. Menéndez Effect of the use in circulating fluidized bed on the performance of a VPO catalyst: Characterization and transient studies, *Chem. Eng. J.* 147 (2009) 330-335
2. Beatriz Zornoza, Silvia Irusta, Carlos Téllez, Joaquín Coronas “Mesoporous silica sphere-polysulfone mixed matrix membranes for gas separation” *Langmuir*, **2009**, 25 (10), 5903-5909
3. Victor Sebastian; Silvia Irusta; Reyes Mallada; Jesus Santamaria, Selective oxidation of CO in the presence of H₂, CO₂ and H₂O, on different zeolite-supported Pt catalysts, *Applied Catalysis. A:Gen*, 366 (2009) 242-251
4. Sebastian V., Irusta S., Mallada R., Santamaría J. Hydrogen purification from carbon monoxide for fuel cells: selective oxidation over Pt-microporous catalysts in a microchannel reactor. *Catal. Today* 1475 (2009)510-516
5. Todd Hoare, Jesus Santamaria, Gerardo F. Goya, Silvia Irusta, Debora Lin, Samantha Lau, Robert Padera, Robert Langer, and Daniel S. Kohane. A magnetically-triggered composite membrane for on-demand drug delivery. *Nano Letters*. **2009**, 9 (10), pp 3651-3657.
6. Luis Manuel Pérez, Clara Yagüe, Luis Gracia-Villab, José Antonio Puértolas, Manuel Arruebo, Silvia Irusta, Jesús Santamaría Effect of Nitinol surface treatments on its physico-chemical properties and on bio-fouling. *Journal of Biomedical Materials Research: Part B - Applied Biomaterials* 91, 2009, 337-347.

7. Nuria Navascues, Miguel Escuin, Silvia Irusta, Reyes Mallada, Jesus Santamaria. Combustion VOCs at trace concentration levels in zeolite-coated microreactors. *Industrial Eng. Chem. Res.* 49 (2010) 6941-6947.
8. Moussaif N, Irusta S, Yagüe C, Arruebo M, Meier J, Crespo, Jimenez MA , Santamaría J. Mechanically reinforced biodegradable nanocomposites. A facile synthesis based on PEGylate silica nanoparticles. *Polymer.* 51 (2010)06132-6139.
9. Sakkarapalayam Murugesan , Senthil Kumar, Jaime Soler Herrero, Silvia Irusta, and Keith Scott. The Effect of pretreatment of Vulcan XC-72R carbon on morphology and electrochemical oxygen reduction kinetics of supported Pd nanoparticle in acidic electrolyte. *Journal of Electroanalytical Chemistry.*647 (2010) 211-221.
10. Laura Gutierrez, Leyre Gomez, Silvia Irusta, Manuel Arruebo, Jesus Santamaria. Comparative study of the synthesis of silica nanoparticles in micromixer-microreactor and batch reactor systems. *Chemical Eng. Journal.* 171 (2011) 674-683
11. S. M. Senthil Kumar, Nur Hidayati, Jaime Soler Herrero, Silvia Irusta, Keith Scott. Efficient Tuning of the Platinum Nano-particle Mono-dispersion on Vulcan XC-72R by Selective Pretreatment and Electrochemical Evaluation of Hydrogen Oxidation and Oxygen Reduction Reactions. *International Journal of Hydrogen Energy* 36 (2011), pp. 5453-5465.
12. Boaz Mizrahi, Silvia Irusta, Marshall McKenna, Liron Yedidsion, Robert Langer, and Daniel S. Kohane. Microgels for Efficient Protein Purification. *Advanced Materials* 23 (2011) H258-H262.
13. Hoare, Todd; Timko, Brian; Santamaría, Jesús; Goya, Gerardo; Irusta, Silvia; Lau, Samantha; Stefanescu, Cristina; Lin, Debora; Langer, Robert; Kohane, Daniel."Magnetically-triggered Nanocomposite Membranes: a Versatile Platform for Triggered Drug Release" *Nano Letters.* 11 (2011) 1395-1400.
14. M. Castrillón, A. Mayoral, C. Magen, J. Meier, C. Marquina , Silvia Irusta, J.Santamaría. Synthesis and characterization of ultra-small NiCo/G and FeNi/G magnetic nanoparticles. *Nanotech.* In press.

- Over 60 presentations at scientific meetings
- 2 international patents.