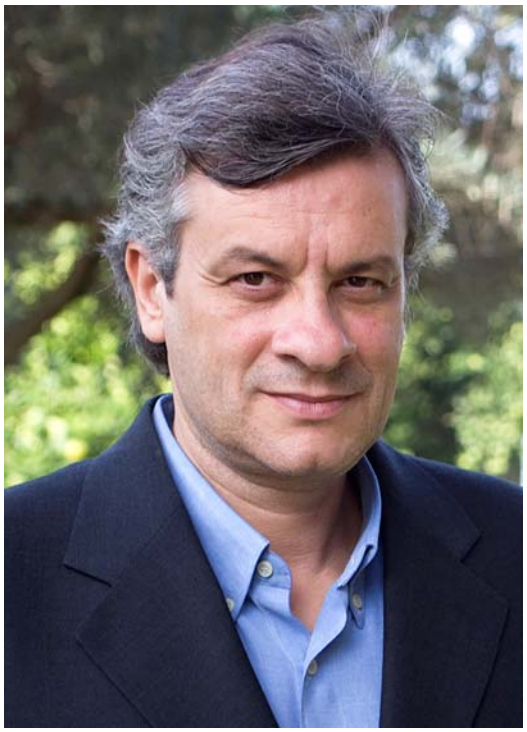
Juan Bisquert



Juan Bisquert (1962, BSc. Physics 1985, Ph.D. Physics Valencia 1992) is full professor of Applied Physics at Universitat Jaume I de Castelló, where he leads the **Group of Photovoltaic and Optoelectronic Devices** of 14 physicists and chemists. He has published more than 170 papers and book chapters in major journals, and has directed more than 20 research projects, including the Consolider project "Hybrid Optoelectronic Devices for Renewable Energy" (HOPE). He is a referee for more than 40 international journals, member of the editorial board of *Energy and Environmental Science*, and referee for research projects evaluation in 10 countries.
Recent research activity was focused on nanoscale device for production and storage of clean energies, in particular photovoltaic devices and organic LEDs based on nanostructured metal oxides and organic conductors. Bisquert is specialist in theoretical modelling and interpretation of impedance spectroscopy of electroactive films, transport in disordered materials, interfacial charge-transfer, and the glass transition.

He has built up a strong international reputation on the application of measurement techniques and physical modeling that relate the device operation with the elementary steps that take place at the nanoscale dimension: charge transfer, carrier transport, chemical reaction, etc. Especially the use of techniques of impedance spectroscopy has shown to be very useful to understand fundamental electronic phenomena in complex situations, such as in porous nanoscaled morphology.
These methods are currently being applied to dye-sensitized solar cells, aligned ZnO nanowires structures, efficient charge injection and transport in organic LEDs, and solid-state photovoltaic devices. Bisquert'lab is currently developing advances in stability and efficiency of dye-sensitized solar cell devices, testing new dyes, sensitivization with quantum dots, and generally improving the device operation in connection with industrial initiatives. Bisquert and colleagues have also formed a small spin-off company, Xop Física, that develops a water sensor for agriculture applications.

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Some recent papers

185.	Iván Mora-Seró, Sixto Giménez, Francisco Fabregat-Santiago, Roberto Gómez, Qing Shen, Taro Toyoda and Juan Bisquert **Recombination in quantum dot sensitized solar cells** *Accounts of Chemical Research*, in press (2009).
184.	Juan Bisquert, Francisco Fabregat-Santiago, Iván Mora-Seró, Germà Garcia-Belmonte, Sicto Giménez **Feature article: Electron lifetime in dye-sensitized solar cells: theory and interpretation of measurements** *Journal of Physical Chemistry C*, **113**, in press (2009).
175.	F. Fabregat-Santiago, J. Bisquert, L. Cevey, P. Chen, M. Wang, S. M. Zakeeruddin, M. Grätzel **Electron transport and recombination in solid state dye solar cell with spiro-OMeTAD as hole conductor** *Journal of the American Chemical Society*, **131**, 558–562 (2009).
174.	J. Bisquert **The two sides of solar energy** *Nature Photonics*, **2**, 648-649 (2008).
167.	F. Fabregat-Santiago, E. M. Barea, J. Bisquert, G. K. Mor, K. Shankar, C. A. Grimes **High carrier density and capacitance in TiO_2 nanotube arrays induced by electrochemical doping** Journal of the American Chemical Society, 130, 11312–11316 (2008).
159.	J. Bisquert **Interpretation of electron diffusion coefficient in organic and inorganic semiconductors with broad distributions of states** Physical Chemistry Chemical Physics, 10, 3175-3194 (2008).
153.	J. Bisquert **Physical Electrochemistry of nanostructured devices** Physical Chemistry Chemical Physics, 10, 49 - 72 (2008).

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