Juan Bisquert is a Distinguished Research Professor at Instituto de Tecnología Química (Universitat Politècnica de València-Consejo Superior de Investigaciones Científicas). He is Executive Editor for Europe of the *Journal of Physical Chemistry Letters*. He has been distinguished in the list of Highly Cited Researchers from 2014 to 2024. The research activity of Juan Bisquert has been focused on the application of measurement techniques and physical modeling in several areas of energy devices materials, using organic and hybrid semiconductors as halide perovskite solar cells. Currently the main research topic aims to create miniature devices that operate as neurons and synapses for bio-inspired neuromorphic computation related to data sensing and image processing. The work on this topic combines harnessing hysteresis and memory properties of ionic-electronic conducting devices as memristors and transistors towards computational networks. The work is supported by European Research Council Advanced Grant.

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Juan Bisquert is a Distinguished Research Professor at the Institute of Chemical Technology (ITQ, Universitat Politècnica de València-CSIC). Prof. Bisquert has made critical contributions to the fields of materials and devices for photovoltaics and neuromorphic applications, focusing on nanostructured oxides, organic conductors, and halide perovskites. A pioneer in applying impedance spectroscopy to unveil nanoscale mechanisms in energy devices, he has advanced the understanding and development of perovskite solar cells, a class of photovoltaic materials and devices that show excellent performance, highlighting their unique semiconductor properties. The main contribution of Bisquert is the application of measurement techniques and physical modeling in several areas of energy devices providing insight to processes of electronic charge transfer, carrier transport, chemical reaction, etc., especially in the field of impedance spectroscopy.

Recently, his research has centered on creating miniature devices that mimic neurons and synapses for bio-inspired neuromorphic computation, integrating hysteresis and memory properties of ionic-electronic conducting devices like memristors and transistors for computational networks related to data sensing and image processing. Different material frameworks are investigated, including organic materials, halide perovskites, electrochemical systems, and metal oxides. In 2023 Bisquert has been awarded a ERC Advanced Grant to develop perovskite spiking network for brain-like computational applications.

Bisquert has published 479 research articles and authored key books, including Physics of Solar Energy Conversion (CRC Press, 2020), which provides a comprehensive physical framework for solar energy devices. His work has garnered 51,000 citations, an h-index of 115 (Clarivate), and a Field-weighted Citation Impact (FWCI) of 4.53 (Scopus). Recognized as a Highly Cited Researcher (Clarivate) since 2014 to 2024 in a row, with over 40% of his work published in the top 10% of journals and over 79% in Q1 quartile journals, his contributions are foundational references in his field. He has received numerous recognitions, including being named among the World's Top 2% Researchers by Stanford University and an ERC Advanced Grant awardee (2023–2028).

Juan Bisquert's scientific leadership is demonstrated through his direction of over 65 national and international research projects and programs of excellence, including the prestigious ERC Advanced Grant (2023–2028) for the project "PeroSpiker." He has served as the principal investigator in more than 25 research projects, notably his participation in three "Excellence Prometeo Program" from the Generalitat Valenciana (2009-2014, DISOLAR; 2014-2018, DISOLAR 2 and 2020-2023, Solpen), in the "Network Project: Instituto Valenciano de Investigación Cooperativa en Nanotecnologías para las Energías Limpias" (2012), and the coordination of the Consolider HOPE (Hybrid and Optoelectronic Devices for Renewable Energy) project (2007–2012), financed by the Ministerio de Educación y Ciencia with 4 million euros, which brought together 100 investigators from 13 universities and research centers in Spain. He has also been awarded several European projects, such as the recent PeroSpiker, A-LEAF (2017-2020), and PEROXIS (2020-2022). He has made significant contributions to international

collaborations, including roles as visiting professor and project manager at prominent institutions such as Astana IT University in Kazakhstan, Yonsei University in South Korea, and King Abdulaziz University in Saudi Arabia. His groundbreaking work continues to bridge the fields of clean energy and artificial intelligence, driving innovation in neuromorphic and energy technologies.

In addition to his research, Bisquert serves as Executive Editor of The Journal of Physical Chemistry Letters and has contributed to over 135 national and international conferences as a committee member and chair. He has delivered more than 60 plenary and keynote lectures and evaluates research projects for major institutions, including the US Department of Energy, Singapore NRF, and the European Research Council. He has mentored over 30 researchers, including MDs, PhDs, and postdoctoral fellows, many of whom have established successful independent scientific careers. His groundbreaking work continues to bridge the fields of clean energy and artificial intelligence, driving innovation in neuromorphic and energy technologies.

Bisquert played a key role in the creation of the Institute of Advanced Materials (INAM) at Universitat Jaume I (Castelló), where he was the funding director and directed INAM for 8 years. Under his leadership, INAM has become a major research center in advanced materials, with a current staff of 110 and many excellent research groups, further solidifying his role as a leader in advancing materials science.

Bisquert has demonstrated a strong commitment to innovation and technology transfer through the creation of tow spin-off companies, Xop Fisica, S.L. and Impedance Spectroscopy Test, S.L., and the holder of two patents. From 2019 to 2021, he directed the Business Innovation Scientific Unit at INAM (UCIE-INAM), funded by the Agència Valenciana de la Innovació. The UCIE-INAM has successfully transformed research knowledge into industrial innovations, resulting in 6 patents, 53 confidentiality agreements, and 22 collaborative projects with industry. This work exemplifies Bisquert's commitment to bridging academia and industry to drive technological progress.

Furthermore, he is deeply engaged in disseminating science to the broader public through conferences, outreach programs, and participation in international seminars. He contributes to science education with activities for primary schools, high schools, and the general public, fostering a greater understanding and appreciation of science across all ages. This dedication to public engagement and education reflects his commitment to making scientific advancements accessible and inspiring the next generation of scientists.