

Workshop on: **Two-Dimensional Materials: Probing the Limits of Physics and Engineering**

Madrid, June 22-23, 2016

CV

IVÁN BRIHUEGA

Associate Professor (permanent position) Dept. Física de la Materia Condensada, Universidad Autónoma de Madrid. From December 2013.

Associate Professor (Ramón y Cajal Researcher). Dept. Física de la Materia Condensada, Universidad Autónoma de Madrid. January 2009-December 2013.

Group-Leader. Max Planck Institute for Solid State Research, Stuttgart (Germany). May 2006-December 2008.

Assistant Professor (as Post-doctoral Fellow). Dept. Física de la Materia Condensada, Universidad Autónoma de Madrid. January 2006-May 2006.

PhD in Physics. Universidad Autónoma de Madrid (2000-2005)

Research

Ivan Brihuega's investigations have been focused on the study of the local properties of nanometric systems at the atomic scale, using scanning tunneling microscopy and spectroscopy as a key experimental tool. He possesses an extensive background in the design, construction and electronic control of scanning probe instrumentation. Since 2008 he investigates, at the atomic scale, the structural electronic and magnetic properties of 2D materials like graphene or BN. He has published 18 papers (4 *Physical Review Letters*, 1 *Nano Letters*, 1 *ACS NANO*, 1 *Nature Materials* and 1 *Science*...) on this specific topic, which have received more than 850 citations (without self citations). His experimental works about the influence of atomic point defects in the magnetic properties of graphene are a world-leading reference in the field. Throughout his scientific career, he has worked in some of the most renowned international laboratories, such as the Max Planck Institute in Stuttgart, the CNRS in Grenoble, IBM Almadén and the Graduate School of Engineering, Osaka.

Most relevant publications in the last 5 years:

Atomic scale control of graphene magnetism by using Hydrogen atoms.

H. González-Herrero, J.M. Gómez-Rodríguez, P. Mallet, M. Moaied, J.J. Palacios, C. Salgado, M.M. Ugeda, J.Y. Veuillen, F. Ynduráin and I. Brihuega

Science 352, 437 (2016)

Graphene Tunable Transparency to Tunneling Electrons: a Direct Tool to Measure the Local Coupling.

H. González-Herrero, P. Pou, J. Lobo-Checa, D. Fernández-Torre, F. Craes, A. J. Martínez-Galera, M. M. Ugeda, M. Corso, J. E. Ortega, J. M. Gómez-Rodríguez, R. Pérez and I. Brihuega.

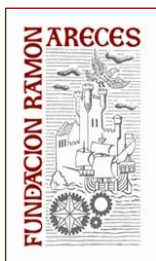
ACS NANO 10, 5131 (2016)

Towards scalable nano-engineering of graphene

AJ. Martínez-Galera, A. J., I. Brihuega, A. Gutierrez-Rubio, T. Stauber, JM. Gómez Rodríguez

Scientific Reports 4, 7314 (2014)

Unraveling the Intrinsic and Robust Nature of van Hove Singularities in Twisted Bilayer Graphene by Scanning Tunneling Microscopy and Theoretical Analysis



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I. Brihuega, P. Mallet, H. González-Herrero, G.T. de Laissardière, M.M. Ugeda, L. Magaud, J.M. Gómez-Rodríguez, F. Ynduráin & J-Y. Veuillen
Phys. Rev. Lett. 109, 196802 (2012)

Ethylene Irradiation: A New Route to Grow Graphene on Low Reactivity Metals

A.J. Martínez-Galera, I. Brihuega and J. M. Gómez-Rodríguez.

Nano Letters 11, 3576 (2011)

Point Defects on Graphene on Metals

M. M. Ugeda, D. Fernández-Torre, I. Brihuega, P. Pou, A.J. Martínez-Galera, R. Pérez and J. M. Gómez-Rodríguez

Phys. Rev. Lett. 107, 116803 (2011)

Observation of shell effects in superconducting nanoparticles of Sn

S. Bose, A. M. García-García, M. M. Ugeda, J. D. Urbina, C. H. Michaelis, I. Brihuega and K. Kern

Nature Materials 9, 550 (2010)

Missing atom as a source of carbon magnetism

M. M. Ugeda, I. Brihuega, F. Guinea and J. M. Gómez-Rodríguez

Phys. Rev. Lett. 104, 096804 (2010)