

## Short Curriculum Vitae



### Prof. Dr. Angel Rubio

**Director**, Max Planck Institute for the Structure and Dynamics of Matter (MPSD)  
*Luruper Chaussee 149, 22761 Hamburg, Germany*

**Distinguished Research Scientist**, Center for Computational Quantum Physics (CCQ),  
Simons Foundation's Flatiron Institute, New York (USA)

**Distinguished Professor of Physics**: Basque Country University, San Sebastián, Spain

Homepages: <https://www.mpsd.mpg.de/research/theory> ; [http://nano-bio.ehu.es/angel\\_rubio](http://nano-bio.ehu.es/angel_rubio)

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**PERSONAL INFORMATION, EDUCATION**: Male, born 27.09.1965 in Oviedo, Spain

- University of Valladolid, Spain, Ph.D. in Physics, "Summa Cum Laude", 1991
- University of Valladolid, Spain, B.S. in Physics, "Summa Cum Laude", 1988

### SCIENTIFIC CAREER:

- Distinguished Research Scientist, Center for Computational Quantum Physics (CCQ) at the Simons Foundation's Flatiron Institute, New York (since September 2017-)
- Full Professor, University of Hamburg, Hamburg (since June 2016-)
- Scientific Member and Director of the Max Planck Institute for the Structure and Dynamics of Matter (MPSD) in Hamburg (since August 2014-)
- Faculty member of the Wolfgang Pauli Centre, Hamburg (2015-)
- Max Planck Distinguished Visiting Scientist, Fritz Haber Institute, MPG, Berlin (2009-2011)
- Miller Visiting Professor, University of California at Berkeley (August - September 2014)
- Full Professor of Condensed Matter Physics (chair), University of the Basque Country UPV/EHU (since April 2001); Director of the Nano-Bio Spectroscopy group (since 2002)
- Chair of the European Theoretical Spectroscopy Facility (ETSF) (<http://www.etsf.eu>) (2012-2014) and Vice President for Scientific Development (2008-2014)
- Professor (1st class), Université de Montpellier 2, France (June - July 2007)
- Professor (Humboldt), Freie Universität Berlin, 2005/2006
- Professor, Lab. des Solides Irradiés, Ecole Polytechnique, France (Dec. 2000 - Apr. 2001)
- Associate Professor, Dpt. Física Teórica, Atomica y Nuclear, Universidad Valladolid, 1994-2001
- Fulbright Fellow, Dept. of Physics, University of California at Berkeley, USA (1992 - 1994)
- Research Fellow "Ministerio de Educación y Ciencia", Universidad Valladolid, Spain (1988-92)

### HONORS / AWARDS:

- 2020 Fellow of the European Academy of Sciences
- 2018 Max Born Medal and Prize
- Gold Medal of the Spanish Royal Physics Society, Madrid, 2016
- European Research Council "ERC Advanced Grant" (2016 - 2021) (QSpec-NewMat)
- Elected Member of the Academia Europaea (2016)
- XV Manuel Laborde Werlinden Prize for the best technology-based business initiative based on innovative ideas: "Materials Evolution", December 2015
- Premio Jaime I de Investigación Básica 2014
- Foreign associate member of the National Academy of Sciences (NAS) of United States (2014)
- External Scientific Member of the Fritz-Haber-Institut of the Max Planck Society (Nov. 2011 -)
- European Research Council "ERC Advanced Grant" (2011 - 2016) (DYNamo)
- Fellow of the American Association for Advanced Science (AAAS) (Physics Section) (2010)
- Dupont Prize in Nanotechnology, Dupont Foundation (2006)
- Friedrich Wilhelm Bessel Research Award, Humboldt Foundation (2005)
- Fellow of the American Physical Society, Division of Materials Science (2004)
- Spanish Royal Physical Society Prize "Jóvenes Investigadores" Madrid, Spain, July 1992
- Honor Prize for the best Ph.D. thesis in Physics, Univ. of Valladolid, Spain, June 1992

- 1st National Prize for Graduated in Physics, October 1989
- American Chemical Society (ACS) recognition (2011) and Outstanding Referee, APS (2009)
- Sir Allan Sewell Fellowship, Australia, 2004
- JSPS Fellow, Program for Research in Japan, 2001 and 2016
- Fulbright Fellow, 1992 - 1994

## SCHOLARLY CONTRIBUTIONS

- More than **400 publications with over 40000** ISI Web of Science (**h-index=98**; over 3,500 cites per year and growing). *36 of his publications are ranked as “highly cited papers”*
- **Five most-cited publications** (citations according to google scholar on May 2020)
  - (3248 cites) G. Onida, L. Reining and A. Rubio, *Electronic Excitations: Density-Functional versus Many-body Green’s-Functions Approaches*, Rev. Mod. Phys. 74, 601 (2002)
  - (1772 cites) PM Ajayan, LS Schadler, C Giannaris, A Rubio, *Single-walled carbon nanotube–polymer composites: strength and weakness*, Advanced materials 12 (10), 750-753 (2000)
  - (1743 cites) A Rubio, JL Corkill, ML Cohen, *Theory of graphitic boron nitride nanotubes*, Physical Review B 49 (7), 5081 (1994)
  - (1577 cites) X Blase, A Rubio, SG Louie, ML Cohen, *Stability and band gap constancy of boron nitride nanotubes*, EPL (Europhysics Letters) 28 (5), 335 (1994)
  - (1522 cites) E Hernandez, C Goze, P Bernier, A Rubio, *Elastic properties of C and BxCyNz composite nanotubes*, Phys. Rev. Lett 80, 4502-4505 (1998)
- More than 200 invited talks, 40 colloquiums; numerous outreach talks and press releases
- Originator of the widely-use *ab initio* computational materials research open-source project octopus (<http://www.tddft.org>). It simulates the dynamics of electrons and nuclei under the influence of time-dependent field, used by more than 1000 groups worldwide.
- Director of 40 PhD students (14 running); supervisor of 58 postdoctoral researchers. Most of my former graduate students and postdocs now hold academic positions at major universities all over the world (Spain, Portugal, Germany, Italy, Austria, Denmark, France, USA, Japan, Ecuador, China, Singapore). Five students now have leading positions in the industry.
- Editor of three books on nanotechnologies plus two fundamental books on Lecture Notes in Physics: TDDFT, “Fundamentals of TDDFT”, Springer Verlag 706 (2006) and 837 (2012)
- Organizer of more than 50 international workshops and schools
- **Structural contributions to the scientific community**: co-founding director of the European Theoretical Spectroscopy Facility (ETSF) (<http://www.etsf.es>). The ETSF is a research and knowledge center that deals with problems of spectroscopy and the properties of electronic excited states in matter. It provides support to research in academic, government and industrial laboratories in interdisciplinary domains such as condensed matter physics, chemistry, biology, materials and nano/bio-science.

## PATENTS:

- Gate-controlled light-emitting device made of BN nanotubes with defects, UPV/EHU (2011); (201130228, ID02207561); US-2014-0014900-A1)
- Field emission source with BN nanotubes, Universidad de Valladolid, P-9802690 (2001).

## SELECTED PROFESSIONAL AND SYNERGISTIC ACTIVITIES (recent)

### Scientific Prize Panels

- Selection committee member for the Hamburg Prize for Theoretical Physics 2016,2017
- Member of the judging panel for the CECAM Berni J. Alder prize 2016
- Member of the 2015 Tsungming Tu Award, Ministry of Science and Technology, Taiwan
- Panel Member for the Francqui Prize, Belgium (2015)
- Panel member Prize Polish Foundation for Science in Chemistry and Material Science (2013 -)

- Member of the Prize Committee "Psi-k Volker Heine Young Investigator Award", 2010, Berlin Germany and 2015, San Sebastian, Spain.

#### Scientific Editorial role

- Editorial Board Member of Springer Series in Solid State Physics (2019-)
- Editorial Board Member of Electronic Structure, IOP (June 2018-)
- Associate Editor of PNAS (Applied Physical Sciences) (since June 2017)
- Associate Editor NanoLetters, ACS (since April 2017)
- Editor in Chief of the European Physical Journal B (July 2011-March 2017)
- Member of the Editorial Board of ChemPhysChem (since 2016)
- Member of the Editorial Board of Lecture Notes in Physics, Springer (since 2011)

#### Advisory and Evaluation Panels

- External Review Committee of The Center for Computational Sciences (CCS), University of Tsukuba (17-21 February 2020)
- Member of the Scientific advisory board (SAB) of the research field "Information" at the Karlsruhe Institute of Technology (KIT) (2019-2023)
- Member of the Scientific advisory board of the FET project "Proto-Opto-Electro-Mechanical Hybrid Systems for Generation-Next Bionic Devices, PROGENY (2020-2023)
- Scientific Academic Advisory Committee (SAAC) review of the area of Organic Chemistry and Material Science (2018) at the Weizmann Institute of Science in Israel (2018)
- Member of the Scientific Advisory Board "Fundacion GADEA por la Ciencia", Spain (2017-)
- Member of the External Scientific Advisory Board of CIQUIS ("Centro Singular de Investigación en Química Biolóxica e Materiais Moleculares") Universidad Santiago de Compostela (2017-)
- Member of the Scientific Advisory Committee of CECAM (Centre Européen du Calcul Atomique et Moléculaire), Lausanne (2015 -)
- Member of the Scientific advisory board (SAB) of the C2SEPEM computational center funded by the National Science Foundation, Berkeley USA (2017-)
- Member of the Science and Software advisory board (SSAB) Molecular Sciences Software Institute (MoISSI) funded by the National Science Foundation (2016-2019)
- Member of the Scientific Advisory Board of MICCoM (Midwest Integrated Center for Computational Materials) DOE Computational Materials Science Center, Argonne, Chicago (2016-2019)
- Miembro del "Alto Consejo Consultivo en I+D+I de la Generalitat Valenciana" (2015-)
- Evaluator for the Office of Science Early Career Research Program, DOE USA (2016)
- Member of the ESF College of Expert Reviewers, 2016 -
- Panel Member for the Russian Science Foundation (RSF) and (RIAC) (2015)
- Member of the Scientific Council of ZCAM (Zaragoza Center for Advance Modeling) (2013- )
- Member of the "Centro de Excelencia en Nanociencia Molecular ISIC-NANO", Valencia (2012-)
- Panel member of the European Research Council, ERC Starting Grant 2013 PE4 (Physical and Analytical Chemical Sciences); Referee for the ERC since 2008
- Referee for the Academy of Finland Academy Professor evaluation (2011 -)
- Panel member of the DFG "Excellence Initiative" (Physics, Mathematics, Geosciences) (2011 -)
- Scientific Advisory Board, Centro de Física Computacional Coimbra, Portugal (2011 -)
- Scientific Advisory Board, Leibniz-Institut IFW-Dresden (2008, 2011)
- Advisory Board Member and Physical Scientist associated to the ITR: Institute for the Theory of Advanced Materials in Information Technology (ITAMIT), University of Minnesota, since 2003
- External Advisory Board Member of the center for Nanotechnology and Molecular Materials, Wake Forest University, North Carolina, USA (Director Prof. D.L. Carroll) (2007 -)
- Member of the BIFI, Zaragoza, Spain, since 2008
- Member of Board of Directors and Trustee of Psi-k (since 2008): founding director of psi-k.org
- Adviser to the European Union "Information Science and Technology Program (2000 -)

- Co-director of the School and workshop on: "Time-Dependent Density-Functional Theory: Prospects and Applications", Benasque Center for Science, Benasque, (Spain) August 29-Sep. 11 (2004); August 26-Sep. 11 (2006); August 31-Sep. 14, (2008); 2-15 January (2010); 4-17 January (2012); 4-18 January (2014); 12-23 Sep. (2016); 20-31 August (2018)