

Dr. Ruben Canton Vitoria

Post-Doctoral Researcher

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LIST OF PUBLICATIONS

1. "A versatile post-doping towards two-dimensional semiconductors," A. Murai Yuya, Z. Shaochun, H. Takato, Liu Z, E. Takahiko, S. Hiroshi, Y. Miyata, I. Toshifumi, G. Yanlin, M. Mina, O. Susumu, M. Hiroyuki, S. Tomohiro, Y. Shoji, S. Hidemi, T. Takashi, W. Kenji, R. Canton-Vitoria, and R. Kitaura, *ACS Nano* **15**, 19225 (2021). DOI: [10.1021/acsnano.1c04584](https://doi.org/10.1021/acsnano.1c04584)
2. "Unveiling the photoinduced electron-donating character of MoS₂ in covalently linked hybrids featuring perylenediimide," I. K. Sideri, Y. Jang, J. Garcés-Garcés, Á. Sastre-Santos, R. Canton-Vitoria, R. Kitaura, F. Fernández-Lázaro, F. D'Souza, and N. Tagmatarchis, *Angew. Chem. Int. Ed.* **60**, 9120 (2021). DOI: [10.1002/anie.202016249](https://doi.org/10.1002/anie.202016249)
3. "Ion-selective crown ether covalently grafted onto chemically exfoliated MoS₂ as biological fluids sensor," A. Stergiou,‡ C. Stangel,‡ R. Canton-Vitoria, R. Kitaura, and N. Tagmatarchis, *Nanoscale* **13**, 8948 (2021). DOI: [10.1039/D1NR00404B](https://doi.org/10.1039/D1NR00404B)
4. "Functionalized graphene and targeted applications – Highlighting the road from chemistry to applications," A. Stergiou, R. Canton-Vitoria, M. N. Psarrou, S. P. Economopoulos, and N. Tagmatarchis, *Prog. Mater. Sci.* **114**, 100683 (2020). DOI: [10.1016/j.pmatsci.2020.100683](https://doi.org/10.1016/j.pmatsci.2020.100683)
5. "Pyrene-functionalized tungsten disulfide as stable resistive photosensor," R. Canton-Vitoria, Y. Sayed-Ahmad-Baraza, M. Pelaez-Fernandez, R. Arenal, C. Bittencourt, C. P. Ewels, and N. Tagmatarchis, *Mater. Adv.* **1**, 2459 (2020). DOI: [10.1039/d0ma00429d](https://doi.org/10.1039/d0ma00429d)
6. "Stabilization of metallic phases through formation of metallic/semiconducting lateral heterostructures," R. Canton-Vitoria, T. Hotta, Z. Liu, T. Inoue, and R. Kitaura, *J. Chem. Phys.* **153**, 084702 (2020). DOI: [10.1063/5.0012782](https://doi.org/10.1063/5.0012782)

7. "Ping-pong energy transfer in covalently linked porphyrin-MoS₂ architectures," R. Canton-Vitoria, T. Scharl, A. Stergiou, A. Cadranel, R. Arenal, D. M. Guldi, and N. Tagmatarchis, *Angew. Chem. Int. Ed.* **59**, 1 (2020). DOI: [10.1002/anie.201914494](https://doi.org/10.1002/anie.201914494)
8. "Preparation, photophysical and electrochemical evaluation of an azaborondipyrromethene/zinc porphyrin/graphene all supramolecular nanoensemble," G. Rotas, M. B. Thomas, R. Canton-Vitoria, F. D'Souza, and N. Tagmatarchis, *Chem. Eur. J.* **26**, 6652 (2020). DOI: [10.1002/chem.202000174](https://doi.org/10.1002/chem.202000174)
9. "Bottom-up synthesized MoS₂ interfacing polymer carbon nanodots with electrocatalytic activity for hydrogen evolution," A. Kagkoura, R. Canton-Vitoria, L. Vallan, J. Hernandez-Ferrer, A. M. Benito, W. K. Maser, R. Arenal, and N. Tagmatarchis, *Chem. Eur. J.* **26**, 6635 (2020). DOI: [10.1002/chem.202000125](https://doi.org/10.1002/chem.202000125)
10. "Non-covalent immobilization of pyrene onto transition metal dichalcogenides for photoinduced charge-transfer processes and protection from photooxidation," R. Canton-Vitoria, Y. Sayed-Ahmad-Baraza, R. Arenal, C. P. Ewels, and N. Tagmatarchis, *Nanomaterials* **10**, 363 (2020). DOI: [10.3390/nano10020363](https://doi.org/10.3390/nano10020363)
11. "Cyanine-graphene hybrid materials for bioimaging applications," K. C. Prousis, R. Canton-Vitoria, G. Pagona, M. Goulielmaki, V. Zoumpourlis, N. Tagmatarchis, and T. Calogeropoulou, *Dyes Pigm.* **175**, 108047 (2020). DOI: [10.1016/j.dyepig.2019.108047](https://doi.org/10.1016/j.dyepig.2019.108047)
12. "Gas sensing using monolayer MoS₂," R. Canton-Vitoria, N. Tagmatarchis, Y. Sayed-Ahmad-Baraza, C. Ewels, D. Winterauer, T. Batten, A. Brunton, and S. Nufer, in *Book: Nanoscale Materials for Warfare Agent Detection: Nanoscience for Security*, Eds: C. Bittencourt, C. Ewels, E. Llobet, Springer Nature B. V. Chapter **5**, 71 (2019). DOI: [10.1007/978-94-024-1620-6_5](https://doi.org/10.1007/978-94-024-1620-6_5)
13. "Excited-state charge transfers in covalently functionalized MoS₂ with zinc phthalocyanine donor-acceptor hybrid," R. Canton-Vitoria, H. B. Gobeze, V. M. Blas-Ferrando, J. Ortiz, Y. Jang, F. Fernández-Lázaro, Á. Sastre-Santos, Y. Nakanishi, H. Shinohara, F. D'Souza, and N. Tagmatarchis, *Angew. Chem. Int. Ed.* **58**, 5712 (2019). DOI: [10.1002/anie.201900101](https://doi.org/10.1002/anie.201900101)

14. "Excited-state charge transfer in covalently functionalized MoS₂ with a zinc phthalocyanine donor–acceptor hybrid," R. Canton-Vitoria, H. B. Gobeze, V. M. Blas-Ferrando, J. Ortiz, Y. Jang, F. Fernández-Lázaro, Á. Sastre-Santos, Y. Nakanishi, H. Shinohara, F. D'Souza, and N. Tagmatarchis, *Angew. Chem.* **131**, 5768 (2019). DOI: [10.1002/anie.201900101](https://doi.org/10.1002/anie.201900101)
15. "Interfacing transition metal dichalcogenides with carbon nanodots for managing photoinduced energy and charge-transfer processes," L. Vallan, R. Canton-Vitoria, H. B. Gobeze, Y. Jang, R. Arenal, A. M. Benito, W. K. Maser, F. D'Souza, and N. Tagmatarchis, *J. Am. Chem. Soc.* **140**, 13488 (2018). DOI: [10.1021/jacs.8b09204](https://doi.org/10.1021/jacs.8b09204)
16. "Electrostatic association of ammonium-functionalized layered-transition-metal dichalcogenides with an anionic porphyrin," R. Canton-Vitoria, C. Stangel, and N. Tagmatarchis, *ACS Appl. Mater. Interfaces* **10**, 23476 (2018). DOI: [10.1021/acsami.8b08272](https://doi.org/10.1021/acsami.8b08272)
17. "Electronic interactions in illuminated carbon Dot/MoS₂ ensembles and electrocatalytic activity towards hydrogen evolution," R. Canton-Vitoria, L. Vallan, E. Urriolabeitia, A. M. Benito, W. K. Maser, and N. Tagmatarchis, *Chem. Eur. J.* **24**, 10468 (2018). DOI: [10.1002/chem.201801425](https://doi.org/10.1002/chem.201801425)
18. "Supramolecular-enhanced charge transfer within entangled polyamide chains as the origin of the universal blue fluorescence of polymer carbon dots," L. Vallan, E. P. Urriolabeitia, F. Ruipérez, J. M. Matxain, R. Canton-Vitoria, N. Tagmatarchis, A. M. Benito and W. K. Maser, *J. Am. Chem. Soc.* **140**, 12862 (2018). DOI: [10.1021/jacs.8b06051](https://doi.org/10.1021/jacs.8b06051)
19. "Interfacing transition metal dichalcogenides with carbon nanodots for managing photoinduced energy and charge-transfer processes," L. Vallan, R. Canton-Vitoria, H. B. Gobeze, Y. Jang, R. Arenal, A. M. Benito, W. K. Maser, F. D'Souza, and N. Tagmatarchis, *J. Am. Chem. Soc.* **140**, 13488 (2018). DOI: [10.1021/jacs.8b09204](https://doi.org/10.1021/jacs.8b09204)
20. "Considerations for spectroscopy of liquid-exfoliated 2D materials: emerging photoluminescence of N-methyl-2-pyrrolidone," S. P. Ogilvie, M. J. Large, G. Fratta, M. Meloni, R. Canton-Vitoria, N. Tagmatarchis, F. Massuyeau, C. P.

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21. "Functionalization of MoS₂ with 1,2-dithiolanes: toward donor-acceptor nanohybrids for energy conversion," R. Canton-Vitoria, Y. Sayed-Ahmad-Baraza, M. Pelaez-Fernandez, R. Arenal, C. Bittencourt, C. P. Ewels, and N. Tagmatarchis, *npj 2D Mater. Appl.* 1, 1 (2017). DOI: [10.1038/s41699-017-0012-8](https://doi.org/10.1038/s41699-017-0012-8)
22. "Organocatalytic asymmetric addition of naphthols and electron-rich phenols to isatin-derived ketimines: highly enantioselective construction of tetrasubstituted stereocenters," M. Montesinos-Magraner, C. Vila, R. Cantón, G. Blay, I. Fernández, M. C. Muñoz, and J. R. Pedro, *Angew. Chem. Int. Ed.* 54, 6320 (2015). DOI: [10.1002/anie.201501273](https://doi.org/10.1002/anie.201501273)
23. "Organocatalytic enantioselective aza-Friedel–Crafts reaction of 2-naphthols with benzoxathiazine 2,2-dioxides," M. Montesinos-Magraner, R. Canton, C. Vila, G. Blay, I. Fernandez, M. C. Muñoz, and J. R. Pedro, *RSC Adv.* 54, 60101 (2015). DOI: [10.1039/C5RA11168D](https://doi.org/10.1039/C5RA11168D)