

Candidate application to the ISGS Board of Directors

Prof. Dr. Nicola Pinna

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CV with main research interests

Nicola Pinna studied physical chemistry at the Université Pierre et Marie Curie (Paris). He received his Ph.D. in 2001, and in 2002, he moved to the Fritz Haber Institute of the Max Planck Society (Berlin). In 2003, he joined the Max Planck Institute of Colloids and Interfaces (Potsdam). In 2005, he moved to the Martin Luther University, Halle-Wittenberg, as an Assistant Professor of Inorganic Chemistry. From March 2006 to June 2012 he was researcher at the Department of Chemistry and CICECO of the University of Aveiro and from September 2009 to June 2012 he was also Assistant Professor at the school of chemical and biological engineering Seoul National University in the framework of the world class university project founded by the National Research Foundation of Korea. In July 2012 he joined the Department of Chemistry of the Humboldt University in Berlin and in 2016 he became the Director of the Department. In 2011 he was ranked among the top 100 materials scientists of the past decade by impact. His research activity is focused on the development of novel sol-gel routes to nanostructured materials, their characterization, and the study of their physical properties.

5 representative publications

S. Wahl, S. M. El-Refaei, A. G. Buzanich, P. Amsalem, K.-S. Lee, N. Koch, M.-L. Doublet, N. Pinna, "Zn_{0.35}Co_{0.65}O – A Stable and Highly Active Oxygen Evolution Catalyst Formed by Zinc Leaching and Tetrahedral Coordinated Cobalt in Wurtzite Structure"
Adv. Energy Mater. **2019**, 1900328

A. Martin, M.-L. Doublet, E. Kemnitz, N. Pinna, "Reversible Sodium and Lithium Insertion in Iron Fluoride Perovskites"
Adv. Funct. Mater. **2018**, 1802057

X. Bai, G. Caputo, Z. Hao, V. T. Freitas, J. Zhang, R. L. Longo, O. L. Malta, R. A. S. Ferreira, N. Pinna, "Efficient and tuneable photoluminescent boehmite hybrid nanoplates lacking metal activator centres for single-phase white-LEDs"
Nature Commun. **2014**, 5, 5702.

M. H. Oh, T. Yu, S.-H. Yu, B. Lim, K.-T. Ko, M.-G. Willinger, D.-H. Seo, B. H. Kim, M. G. Cho, J.-H. Park, K. Kang, Y.-E. Sung, N. Pinna, T. Hyeon, "Galvanic Replacement Reactions in Metal Oxide Nanocrystals"
Science **2013**, 340, 964.

P. A. Russo, N. Donato, S. G. Leonardi, S. Baek, D. E. Conte, G. Neri, N. Pinna, "Room-temperature hydrogen sensing with heteronanostructures based on reduced graphene oxide and tin oxide"
Angew. Chem. **2012**, 51, 11053.

Statement of interest:

Prof. Pinna has started working in the field of sol-gel chemistry with development the application of sol-gel chemistry in reverse micelles to metal oxides nanoparticles since 2002. Since 2003 he became interested to the study and application of non-aqueous/non-hydrolytic sol-gel chemistry. In particular together with Prof. Markus Niederberger he developed a large variety of non-hydrolytic hydroxylation and aprotic condensation reactions to many metal oxide and hybrid organic inorganic nanostructures. Nowadays, he is also interested in the application of the fluorolytic sol-gel chemistry for the synthesis of metal fluorides for applications in heterogeneous catalysis and energy storage.

Since the beginning of his independent career he has been in close contact with the sol-gel community and participated actively to the development and the life of the society. He for example organised the sol-gel summer school in Berlin in 2016 and he has been teaching at the sol-gel summer school since 2012. This denotes his motivation towards the promotion of sol-gel science and technology to young researchers. Furthermore, he applied for the organisation of the International Sol-Gel Society conference in Berlin in 2021.

During my term as a board member I will also try to revitalise the German Sol-Gel community, indeed I felt that in the last years it has slowly decreased its interest in the society, and its participation in conferences and summer schools organized by the society has progressively decreased. The organisation of the next International Sol-Gel conference in Berlin is a first step towards this objective.