



A Tribute to Professor Gaetano Granozzi and His Contributions to Surface Science on the Occasion of His 70th Birthday

Kurt W. Kolasinski [†]

Department of Chemistry, West Chester University, West Chester, PA 19383, USA; kkolasinski@wcupa.edu + Associate Editor of *Surfaces*.

On the occasion of his 70th birthday, we celebrate the career of our Editor-in-Chief, Professor Gaetano Granozzi. Prof. Granozzi's work is marked by his dedication to the fundamental understanding of technologically relevant systems through the lens of surface science.

His approach to the field developed from a background in inorganic chemistry and an expansion of the concept of the cluster–surface analogy. His desire to connect experimental advances to theoretical understanding rather than just correlation has led him to explore both high-surface area and ideal single-crystal materials with a range of UHV-based spectroscopic and structural tools as well as wet chemical studies. His work has spanned a broad range of materials, and he has branched out from his roots in heterogeneous catalysis to encompass photo- and electro-catalysis as well. Perhaps his most impactful investigations have resulted from the training of his sights on graphene and other 2D systems.

His growing influence on the fields of materials for energy applications and solar chemistry is exemplified by his recent work published both in *Surfaces* and elsewhere, in which he and his colleagues have explored systems ranging from porphyrin layers on single-crystal Au substrates [1] to graphene [2,3], TiO₂ [4], mesoporous carbon [5], Ni-doped MoS₂ [6], and WS₂ [7]. Professor Granozzi's work on CO₂ reduction [8] and H₂ generation [9,10] has provided atomic-scale understanding to electrocatalytic processes that will to underpin the translation of surface science advancements into the processes that are required for the increasingly sustainable chemical industry of the future.

The members of the Editorial Board of MDPI's *Surfaces* are honored by the commitment that Professor Granozzi has displayed in building up *Surfaces* from a mere idea into an established open access forum for the publication of frontier research in surface science as it has been broadly defined.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The author declares no conflict of interest.



Citation: Kolasinski, K.W. A Tribute to Professor Gaetano Granozzi and His Contributions to Surface Science on the Occasion of His 70th Birthday. *Surfaces* 2021, *4*, 293–294. https:// doi.org/10.3390/surfaces4040024

Received: 25 November 2021 Accepted: 25 November 2021 Published: 27 November 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/).

References

- Kosmala, T.; Blanco, M.; Granozzi, G.; Wandelt, K. Potential Driven Non-Reactive Phase Transitions of Ordered Porphyrin Molecules on Iodine-Modified Au(100): An Electrochemical Scanning Tunneling Microscopy (EC-STM) Study. *Surfaces* 2018, 1, 12–28. [CrossRef]
- Mattevi, C.; Eda, G.; Agnoli, S.; Miller, S.; Mkhoyan, K.A.; Celik, O.; Mastrogiovanni, D.; Granozzi, G.; Garfunkel, E.; Chhowalla, M. Evolution of Electrical, Chemical, and Structural Properties of Transparent and Conducting Chemically Derived Graphene Thin Films. *Adv. Func. Mater.* 2009, *19*, 2577–2583. [CrossRef]
- 3. Favaro, M.; Ferrighi, L.; Fazio, G.; Colazzo, L.; Di Valentin, C.; Durante, C.; Sedona, F.; Gennaro, A.; Agnoli, S.; Granozzi, G. Single and Multiple Doping in Graphene Quantum Dots: Unraveling the Origin of Selectivity in the Oxygen Reduction Reaction. *ACS Catal.* **2015**, *5*, 129–144. [CrossRef]
- 4. Czoska, A.M.; Livraghi, S.; Chiesa, M.; Giamello, E.; Agnoli, S.; Granozzi, G.; Finazzi, E.; Valentin, C.D.; Pacchioni, G. The Nature of Defects in Fluorine-Doped TiO₂. J. Phys. Chem. C 2008, 112, 8951–8956. [CrossRef]
- Perazzolo, V.; Durante, C.; Pilot, R.; Paduano, A.; Zheng, J.; Rizzi, G.A.; Martucci, A.; Granozzi, G.; Gennaro, A. Nitrogen and sulfur doped mesoporous carbon as metal-free electrocatalysts for the in situ production of hydrogen peroxide. *Carbon* 2015, 95, 949–963. [CrossRef]
- 6. Mosconi, D.; Till, P.; Calvillo, L.; Kosmala, T.; Garoli, D.; Debellis, D.; Martucci, A.; Agnoli, S.; Granozzi, G. Effect of Ni Doping on the MoS₂ Structure and Its Hydrogen Evolution Activity in Acid and Alkaline Electrolytes. *Surfaces* **2019**, *2*, 531–545. [CrossRef]
- Kosmala, T.; Palczynski, P.; Amati, M.; Gregoratti, L.; Sezen, H.; Mattevi, C.; Agnoli, S.; Granozzi, G. Strain Induced Phase Transition of WS₂ by Local Dewetting of Au/Mica Film upon Annealing. *Surfaces* 2021, 4, 1–8. [CrossRef]
- Ma, B.; Blanco, M.; Calvillo, L.; Chen, L.; Chen, G.; Lau, T.-C.; Dražić, G.; Bonin, J.; Robert, M.; Granozzi, G. Hybridization of Molecular and Graphene Materials for CO₂ Photocatalytic Reduction with Selectivity Control. *J. Am. Chem. Soc.* 2021, 143, 8414–8425. [CrossRef] [PubMed]
- 9. Favaro, M.; Cattelan, M.; Price, S.W.T.; Russell, A.E.; Calvillo, L.; Agnoli, S.; Granozzi, G. In Situ Study of Graphene Oxide Quantum Dot-MoS_x Nanohybrids as Hydrogen Evolution Catalysts. *Surfaces* **2020**, *3*, 225–236. [CrossRef]
- Kosmala, T.; Baby, A.; Lunardon, M.; Perilli, D.; Liu, H.; Durante, C.; Di Valentin, C.; Agnoli, S.; Granozzi, G. *Operando* visualization of the hydrogen evolution reaction with atomic-scale precision at different metal–graphene interfaces. *Nat. Catal.* 2021, *4*, 850–859. [CrossRef]