

Special Issue

In Situ and Operando Catalyst Characterization

Message from the Guest Editors

The development of new technologies to meet the current energy and environmental challenges requires the acquisition of very fundamental knowledge regarding the structure and activity of catalytic materials at the nanometric scale. A particularly challenging endeavor is to derive an accurate correlation between an atomically well-defined site and its catalytic activity. In many cases, standard characterization techniques provide only area-averaged information, so connecting specific figures of merit concerning the reactivity to a single type of catalytic site is not trivial, given that various structural and morphological features can be co-present on the same “real” catalyst. In this Special Issue, we cordially invite manuscripts that address advanced in situ and operando characterizations of catalysts, electrocatalysts, and, in general, other dynamic processes occurring on surfaces, both through local and defocused probes. We also welcome papers employing in silico approaches to study dynamic processes on surfaces.

Guest Editors

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Deadline for manuscript submissions

closed (31 July 2025)



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About the Journal

Message from the Editor-in-Chief

Surfaces and interfaces are ubiquitous, and their relevance in Chemistry, Physics, Catalysis, Materials Science & Engineering, Nanoscience, Biology and Nanomedicine is nowadays well acknowledged. Similarly, surfaces cannot be neglected when targeting applications in many strategic fields, such as sensors, energy conversion and storage, environmental and food science, and medical devices.

Surfaces is a new Open Access journal that will provide rapid publication of scholarly articles on studies related to surfaces and interfaces. Its mission is to publish cutting edge articles and conference proceedings and organizing special issues to highlight outstanding research on specific topics, encouraging the application of a rigorous Surface Science-based approach to many complex interesting phenomena and breaking boundaries among different disciplines.

Editor-in-Chief

Prof. Dr. Gaetano Granozzi
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Author Benefits

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indexed within ESCI (Web of Science), Scopus, Inspec, CAPIus / SciFinder, and other databases.

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.3 days after submission; acceptance to publication is undertaken in 3.6 days (median values for papers published in this journal in the second half of 2025).

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