

DOI: 10.1002/celc.202200691

Editorial

Received: 22.Juni 2022

Revised: 13.Juli 2022

## **Spain–France Special Collection: Current Trends in Electrochemistry**

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**Stengthening collaborations with Spain:** This Special Collection includes reports of the latest advances from expert researchers in environmental and energy applications within the growing field of electrochemistry. The articles provide important contributions towards the progress in France and Spain, and the international electrochemistry community, and the development of electrochemical solutions for the electrification of processes.

The Meeting of the Electrochemistry Group of the Spanish Royal Society of Chemistry (RSEQ) is an annual event that has taken place since the late 1970s. The meeting brings together the entire Spanish electrochemistry community at a single event to discuss the latest advances in our field, and normally takes place in different Spanish cities. Over the last decade, mainly due to the deep economic crisis experienced in Spain, the number of electrochemists trained in Spain who have emigrated and today lead important groups in other European countries and in the USA has grown significantly. Thus, the XLI Meeting of the Electrochemistry Group was organized in Paris (France) in 2021, and served to regroup all electrochemists trained in Spain, both emigrants and residents. By holding the meeting outside of Spain, the Electrochemistry Group aimed to internationalize the group's meetings and to strengthen collaborations with the French electrochemistry community.

&initial;Based on the premise that scientific and technological development is more fruitful when the efforts of diverse teams are combined, the 41st Meeting of the Electrochemistry Group of the Spanish Royal Society of Chemistry was held jointly with the 1st French-Spanish Atelier/Workshop on Electrochemistry (Figure<sup>1</sup><fig1/ur>). The

meeting was held in Paris to gather electrochemists trained in Spain, both emigrants (leading groups in other European countries and the USA) and residents, along with French electrochemists. The topic of the meeting included all aspects of electrochemistry, and was thus titled “*Spain-France: Current Trends in Electrochemistry*”. We believe that the organization of binational or intra-European conferences will help to strengthen collaborations and give a wider visibility to electrochemical research in Europe. A good example of this includes bilateral programs such as the Hubert Curien Partnership (PHC). The longest established PHCs were set up over 30<sup>^</sup>years ago between partners in France, Spain, and Germany.

&initial;The 41st Meeting of the Electrochemistry Group of the Spanish Royal Society of Chemistry (GE-RSEQ) and the 1st French-Spanish Atelier/Workshop on Electrochemistry were held in Paris at the Sorbonne Université from July 6 to 9, 2021 (<url><https://cte-gerseq2020.org/></url>). This was the first time that the Annual Meeting of the Spanish Electrochemistry group was organized abroad, facilitated by collaboration with the Electrochemistry Division of the French Chemical Society (SCF). The event included: (1) general sessions with participants from Spanish and French groups, whose research involves electrochemistry, and (2) the “1st French–Spanish Atelier/Workshop on Electrochemistry” with young professors and researchers from both countries invited to give presentations in the field of electrochemistry. The organizing committee included Carlos<sup>^</sup>M. Sanchez Sanchez (Chairman), Marc Fontecave (Honorific Chairman), Maria Gomez Mingot (Secretary), Daniel Rose, Antoine Loiret, Christine Mousty, Beatriz Puga, Encarnacion Torralba, and Neus Vila (Figure<sup>^</sup>2<figr2/ol>).

&initial;The event, one of the first on-site, in-person international meetings after more than a year due to the SARS COVID19 pandemic, was very successful (Figure<sup>^</sup>3<figr3/ul>). The meeting used a hybrid configuration, including both face-to-face and virtual participants,

with 150 attendants and 130 oral/poster contributions (Figure<sup>4</sup><figr4>). This event was originally scheduled to take place in 2020, as a purely on-site meeting, but was postponed due to the pandemic. The three-day scientific program included:

- Three plenary presentations of 45<sup>min</sup> by Prof. Clement Sanchez (College de France), Prof. José Luis Tirado (Universidad de Córdoba), and Prof. Jean-Pierre Sauvage, Nobel Prize Laureate for Chemistry 2016 (Université de Strasbourg)
- 64 oral communications of 20<sup>min</sup>
- 66 posters discussed during a poster session,
- Two prize-giving ceremonies, a Young Researcher's Prize and a Thesis Prize awarded by the Royal Spanish Society of Chemistry.

The joint event achieved its objectives, including: (i) providing an on-site congress despite the challenges of international travel; (ii) strengthening collaborations between the Spanish and French electrochemistry communities; (iii) discussion of the development of a European structure of Electrochemistry, building on the E3 Mediterranean Symposium: Electrochemistry for Environment and Energy (E3MS) between France, Belgium, Spain and Italy; and (iv) development of cooperation between the Masters programs of different Universities (UPEC; Paris Sorbonne; eight Spanish universities that participate in the Interuniversity Master on 'Electrochemistry. Science and Technology') to promote future student exchanges and collaborations.

&initial;Selected oral and poster communications from the Current Trends of Electrochemistry 2021 meeting were invited to contribute original research or review articles to this Special Collection. It is, therefore, a great pleasure for us, as Guest Editors, to introduce this collection, which contains articles on different aspects of Electrochemistry. These presentations come from renowned research groups in Spain, France, and Belgium. Several articles report on capture and electrochemical conversion of CO<sub>2</sub> and other topics

include the electrocarboxylation of organic molecules, the study of free-base porphyrins by electrochemistry, a nickel-cobalt material for glycerol oxidation, and the preparation of Fe<C->N<C->C electrocatalysts for the reduction of oxygen.

In summary, this Special Collection includes reports of the latest advances from expert researchers in environmental and energy applications within the growing field of electrochemistry. The articles provide important contributions towards the progress in France and Spain, and the international electrochemistry community, and the development of electrochemical solutions for the electrification of processes.

&initial;The Guest Editorial Team for this special issue, including Ignasi Sirés (Universitat de Barcelona, Spain), Manuel<sup>^</sup>A. Rodrigo (Universidad de Castilla-La Mancha, Spain), Maria Gomez Mingot (Collège de France, France) and Edward P.L. Roberts (Calgary University, Canada), would like to warmly acknowledge all of the participants of the France-Spain Current Trends in Electrochemistry workshop for their contributions or attendance at the workshop and, in particular, the contributors to this Collection. The invaluable support provided by the Editor-in-Chief of the Journal, Dr. Kate Lawrence, and the Senior Associate Editor, Dr. Kira Walter, was particularly appreciated. All of the manuscripts underwent a thorough peer review process by at least two external referees and the Guest Editors are especially thankful to all reviewers who shared their expertise, provided insightful comments, and thereby enhanced the final quality of the contributions.

Figure<sup>^</sup>1 The logo from the meeting “41st Meeting of the Electrochemistry Group of the Spanish Royal Society of Chemistry and the 1st French–Spanish Atelier/Workshop on Electrochemistry”, Current Trends in Electrochemistry.

Figure<sup>^</sup>2 The organizing committee of the 1st French–Spanish Atelier/Workshop on Electrochemistry. From left to right: Maria Gomez Mingot, Carlos M. Sanchez Sanchez, Neus Vila, Beatriz Puga, Encarnacion Torralba, and Daniel Rose.

Figure<sup>3</sup> Closing ceremony of the 1st French–Spanish Atelier/Workshop on Electrochemistry with a hybrid configuration, including both face-to-face and virtual participants.

Figure<sup>4</sup> Two examples of on-line presentations during the poster session.