



A Perspective on Chemistry and Society

A Column on the Occasion of the 75th Anniversary of CHIMIA

Anales de Química de la Real Sociedad Española de Química

Anales de Química, la Revista de la Real Sociedad Española de Química – The Magazine of the Spanish Royal Society of Chemistry

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Abstract: *Anales de Química de la Real Sociedad Española de Química* is the flagship journal of the Spanish Royal Society of Chemistry (RSEQ). *Anales* currently publishes different types of articles including essays, interviews, opinion, and review articles written for readers (scientists and teachers) who are not specialists in the field. The journal has a special focus in didactics and history of chemistry. A substantial part of its content is directed towards high school chemistry teachers. An overview of the history of the journal together with its current activities, as well as a brief history of the RSEQ are presented.



Miguel A. Sierra obtained his PhD in Organic Chemistry at the Complutense University of Madrid (UCM), Spain in 1987. He was an Assistant (UCM, 1987), Associated (UCM, 1990) and Full Professor by 2005. He was a member of the Scientific Advisory Board of the Organization for the Prohibition of Chemical Weapons (OPCW) (2003–2009). He is the General Editor of

Anales de Química (RSEQ) and a member of the Editorial Board of the *Eur. J. Org. Chem.* He was awarded (2003) the Military Cross with white ribbon, the Ignacio Ribas and Felix Serratosa Excellence Awards (Organic Section, RSEQ, 2013, 2019). Prof. Sierra's research interests focus on the synthesis of functional bio-organometallic compounds, the production of hydrogen using hydrogenase mimics, the mechanisms of Fe-capture by plants and the design and synthesis of novel energetic materials.

1. *Anales de Química de la Real Sociedad Española de Química*

Anales de Química de la Real Sociedad Española de Química (analesdequimica.es), colloquially known in Spain as *Anales*, is the flagship magazine of the Spanish Royal Society of Chemistry (RSEQ, rseq.org). *Anales* currently publishes different types of articles including essays, interviews, opinion, and review articles written for scientists and teachers not specialists in the field. The journal has a special focus on didactic and history of chemistry. A substantial part of its content is directed towards high school chemistry teachers. The four issues of *Anales de Química* published every year are exclusively written in Spanish. *Anales* is fully electronic, published as an open access journal, and it can be printed on demand. Around 350–400 pages are published annually.

2. History

The history of *Anales* is long and complicated. It is intimately bound to the history of the RSEQ and by extension to the history and development of science in Spain. The journal was born as

Anales de la Sociedad Española de Física y Química (*Anales* of the Spanish Society of Physics and Chemistry) in 1903 and is approaching its 120th anniversary, which for a Spanish journal is not only remarkable but exceptional.

The first issue of *Anales* was published in March of 1903 (Fig. 1), as a consequence of the initiative of the recently founded Sociedad Española de Física y Química (Spanish Society of Physics and Chemistry). The aim of this new scientific journal was “*To disseminate among the specialists the work of Spanish and, to the limit of our possibilities, foreign scientists...and to spread to the general public interested in Science the scientific information available to the Society*”.

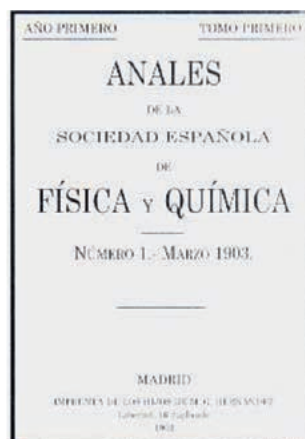


Fig. 1. The front cover of the first issue of *Anales de la Sociedad Española de Física y Química* (March 1903).

This declaration of good intentions collided with the lack of a scientific tradition in Spain. The difficulty of publishing original contributions in *Anales* forced the journal to widen its scope. The publication of (translated into Spanish) articles extracted from the German and French scientific literature was fundamental for the survival of the journal during its early childhood. The years of WWI were especially critical due to the shortage of paper and the skyrocketing costs of production (printing and distribution). The IUPAC meeting in Madrid in 1934 (the first after the WWI) was carefully and joyfully collected in *Anales*. This attempt to internationalize *Anales* ended abruptly with the military coup that took place in July 1936.

Anales was published again in 1941 as a journal from the Spanish Scientific Council (CSIC) and the RSEFyQ. Interestingly, this version of *Anales* is the first to contain the *nihil obstat* signed by the censor and the *imprimatur* from the ecclesiastic (catholic) authority, in this case the vicar general of Spain. *Anales* was split in two series, A and B, for Physics and Chemistry respectively, in 1948. This was also the first clue for the future excision of the Societies of Physics and Chemistry, which became effective in 1976. The year 1965 marked the separation of *Anales de Física y Química* in *Anales de Química* and *Anales de Física*.

Since 1965 *Anales de Química* (Fig. 2) began a long and painful journey. The journal published articles in Spanish written by Spanish authors when, at that moment, science and particularly chemistry was published in English. The beginning of democracy in Spain exacerbated the problems in *Anales*. Spanish research experienced an explosive growth. The number and quality of sci-

entific publications in chemistry in Spain placed the country in the 8th position of the world in a few years. The consequence was that *Anales* lost most of its most prestigious contributors which, obviously, preferred to publish articles in English in international journals.



Fig. 2. The front cover of the *Anales de Química* after the separation from the *Anales de Física y Química*.

To counteract this language handicap, the RSEQ decided in 1996 to publish the journal in English. *Anales de Química* was renamed *Anales de Química International Edition* (Fig. 3). The slight increase in impact factor (from 0.12 to 0.3) at the expense of unaffordable costs for the RSEQ did not justify the continuity of the journal.

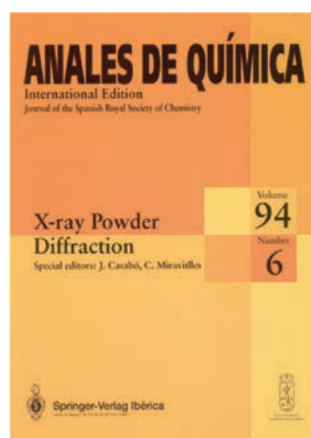


Fig. 3. The front cover of the first issue of *Anales de Química International Edition*.

These years witnessed an exceptional, difficult, and unprecedented effort of various European societies that decided to amalgamate their flagship journals. Nine European societies published *Chemistry – A European Journal* in 1995. The sentimental cost of this unification for the different societies was immense. The negotiations that ended with the foundation of ChemPubSoc Europe, were memorable, but this is a different story. The condition to participate in ChemPubSoc was to end the publication of original research articles in the national journals. Therefore, *Anales de Química International Edition* ceased publication in 1998.

Upon the disappearance of *Anales de Química International Edition* due to its incorporation in the European consortium, the RSEQ decided to recover the old name *Anales de la Real Sociedad Española de Química* as the Society magazine (Fig. 4). The goals of this new *Anales* (marked as the 2nd epoch on the cover page) were to be a vehicle for communication between the members of the Spanish society, as well as to publish teaching materials for high school education and history of chemistry. The publication of scientific reviews by Spanish authors to dis-

seminate the highlights of their research fields and their personal contributions remains the backbone of the magazine. This may appear as a longing for old times, but these reviews fulfil the role to provide in a concise and state of the art fashion, high level informative reviews to the Spanish speaking community. Incorporation of interviews, essays, and in general different articles to promote communication between Spanish-speaking scientists widened the scope of the journal.



Fig. 4. The front cover of the *Anales de Química* after its incorporation to ChemPubSoc Europe.

It should be highlighted that *Anales* provides great support and information to the international Spanish-speaking chemistry community. In fact, during the last years around 50–65% of our readers are from Central and South America. Three of our twelve Associate Editors are from America (Mexico, Argentina and Chile). One of the priorities of the magazine is to attract publications from foreign Spanish-speaking authors.

Currently, *Anales* is completing a complete renewal initiated in 2014. This renewal has included a new submission system (based on OJS), new design of the magazine, new structure for contributions, and the formalization of integration into scholarly databases. The future of the magazine is the full digitalization of its archives and the integration as a reference in the Spanish-speaking scientific and teaching communities (Fig. 5).



Fig. 5. The front cover of the latest issue of *Anales de Química*.

3. La Real Sociedad Española de Química – The Spanish Royal Society of Chemistry

The Spanish Society of Physics and Chemistry (SEFyQ) was established on January 23, 1903, in Madrid. The first president was José Echegaray (interestingly he was awarded the Nobel Prize for Literature in 1904). The history of the Spanish Society of Physics and Chemistry is as turbulent as the history of Spain in the 20th century.

From the beginning the Society's fundamental goal was to promote the equalization of the poor and retarded Spanish science

with that of the European scientific powers (especially Germany, England, and France). This was the longstanding and unfulfilled objective of the SEFYQ during the next 30 years, even if its work was recognized with the title of 'Real' by King Alfonso XIII in 1928. During these initial years the claim of the Society for funds to improve science in Spain met with little success. The Spanish Civil War (1936–1939) followed by the 40 years of Franco's dictatorship did not help to advance science and by extension the Society (now Royal Society). Lack of funding together with the forced emigration of republican scientists after the Civil War were a permanent handicap for the recovery and development of the Science in Spain during these years.

Nevertheless, the generation of chemists born after the Civil War began the revitalization of chemistry in Spain during the 1960s. The separation of the Physics and Chemical Societies in 1976 coincided with the difficult path of Spain to democracy, and with the strong recovery of Spanish science (especially chemistry). The so-called 'Spanish Miracle' that put Spanish chemistry in the 8th position of the world ranking was not matched by the fortunes of the RSEQ. Economic and political problems marked the life of the Society until the end of the first decade of the 21st century. Since then, the RSEQ has experienced a superb recovery. The incorporation of *Anales de Química* to ChemPubSoc Europe (now Chemistry Europe) alleviated the economic problems of the Society. This fact, together with the hard work of the last presi-

dents of the Society has resulted in a sensational recovery of the Society, that is now the first (based on the number of members and activities) scientific society of Spain.

The RSEQ has currently around 4800 members, and its structure is federal, with 22 Territorial Sections (closely matching the autonomous communities of Spain). The RSEQ is divided in Specialized Sections (26), according to the different areas of specialization of its members. Following this structure, the RSEQ holds a Biennial General Scientific Meeting that attracts around 1000 participants. The Scientific Meetings are organized by the different Territorial Sections. The next meeting is scheduled for 2022 in Granada. The Groups celebrate their meetings every two years alternating with the General Meetings.

The current goals of the RSEQ are the representation against the state scientific agencies of scientists and docents working in chemistry, the dissemination of chemistry to the people, and, as the priority issue, the attraction of scientific vocations. The organization of the Chemistry Olympics (national and international), as well as support for high school teachers are main actions of this society.

Finally, the defense of initiatives to prevent the degradation of the environment as well as the equality of opportunities define the spirit of the RSEQ.

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