Analytical and Bioanalytical Chemistry (ABC): tradition and vision

Günter Gauglitz¹ · Stephen A. Wise²

Published online: 22 April 2020

© This is a U.S. government work and not under copyright protection in the U.S.; foreign copyright protection may apply 2020

In contrast to other analytical chemistry journals, *Analytical and Bioanalytical Chemistry (ABC)* has not only a publisher but it also has a number of European chemistry societies as co-owners. One reason for the multiple owners is the origin of ABC, which was originally founded as *Zeitschrift für Analytische Chemie* (Journal for Analytical Chemistry) by Karl Remigius Fresenius nearly 160 years ago. In 1990, Wilhelm Fresenius changed the journal's name to *Fresenius' Journal of Analytical Chemistry* to emphasize the international reputation of the journal, which received its first submissions in English in the 1950s [1].

In the mid-1990s, ten European chemical societies and two commercial publishers established a collaboration “to provide a combination of excellent scientific quality, reasonable subscription rates and high commercial efficiency... with the intention of publishing the best chemistry from Europe and the rest of the world, while promoting and preserving the desirable and necessary diversity of the scientific publications” [2]. When *Fresenius' Journal of Analytical Chemistry* was sold in 2001, the Gesellschaft Deutscher Chemiker (GDCh) (Society of German Chemists) with its president Heindirk tom Dieck seized the opportunity together with the owner, Springer-Verlag, to move forward with a European journal of analytical chemistry [3]. At the beginning, the GDCh, the Société Française de Chimie (SFC) (French Society of Chemistry), and the Sociedad Española de Química Analítica (SEQA) (Spanish Society of Analytical Chemistry) joined Springer-Verlag as co-owners of the journal. Their society journals, *Fresenius' Journal of Analytical Chemistry*, *Analisis*, and *Chimica Analitica*, respectively, were merged to create a

new journal, *Analytical and Bioanalytical Chemistry*, which became the sixth member of the European family of chemical journals [2]. Following the tradition of the original society analytical chemistry journals, the scope of this new journal covered the entire range of analytical and bioanalytical research and its application. From the beginning, ABC's focus was on analytical chemistry in environmental, material, and life sciences. However, in comparison to the former society journals, emphasis was placed on a multidisciplinary approach for solving analytical and bioanalytical problems, and, in particular, bioscience was given greater coverage in the new journal than in its predecessors. During the negotiations of the European chemistry societies and Springer-Verlag, the co-owners, in conjunction with Christina Dyllick and Peter Enders, selected the first international team of editors: Sylvia Daunert, Philippe Garrigues, Günter Gauglitz, Klaus G. Heumann, Kiyokatsu Jinno, and Stephen A. Wise [4–6]. These editors started working in June 2001, and at the beginning of 2002, the new name “*Analytical and Bioanalytical Chemistry*” first appeared on the cover of the inaugural issue of volume 372, still retaining the traditional colors of the predecessors (see Fig. 1). Shortly thereafter, ABC covers changed to offer a variety of photos and colorful graphic images from published papers. In 2002, Alfredo Sanz-Medel joined the editor team, when the Real Sociedad Española de Química (RSEQ) (Royal Spanish Society of Chemistry) became another co-owner of the journal. In subsequent years, the Austrian Society of Analytical Chemistry (ASAC), the Division of Analytical Sciences of The Swiss Chemical Society (DAS/SCS), the Società Chimica Italiana (SCI) (Italian Chemical Society), and the Polskie Towarzystwo Chemiczne (PTCHEM) (Polish Chemical Society) also joined the group of co-owners, and in 2011, Aldo Roda from Italy became editor number eight. Because of the journal's European origins, over 60% of the authors of papers published in ABC during the first decade came from Europe. However, within the last decade, the journal has become recognized as a truly international journal with now over 50% of the authors from countries outside of Europe. The journal's expanding international reputation was also reflected by adding new editors

✉ Günter Gauglitz
guenter.gauglitz@uni-tuebingen.de

✉ Stephen A. Wise
stephen.wise@nih.gov

¹ Institute for Theoretical and Physical Chemistry,
Eberhard-Karls-University, Tübingen, Germany

² Office of Dietary Supplements, National Institutes of Health,
(NIH-ODS), Bethesda, MD, USA

Fig. 1 First cover of *Analytical and Bioanalytical Chemistry*, Volume 372 No. 1, January 2002 with the logos of the three original co-owner societies

from China and Australia and by expanding the number of editors to the current team of 11 editors from France, Germany, Italy, Spain, Switzerland, China, and the USA [7–9]. The International Advisory Board currently consists of 63 eminent scientists representing 21 countries and the broad scope of analytical and bioanalytical sciences, demonstrating the geographical and topical diversity of ABC. In 2017, ABC made a structural change to the editor team by appointing one of the editors as the Chair Editor to facilitate better communication among the editors, editorial office, and the co-owner societies [10]. Adam Woolley is currently serving as the Chair Editor, and he will continue in this role for another three-year term.

ABC tradition focuses on method-oriented papers. New analytical instrumentation and advanced evaluation techniques are also an emphasis of ABC. Perhaps more than some journals, ABC expects what we refer to as “good laboratory practice” and “good analytical practice” in papers submitted for publication. This means that calibration must be combined with sound statistical evaluation (providing error bars) and that methods and results must be validated against and compared with existing methods to demonstrate improvements [11]. These classical analytical benchmarks must now be applied to modern instrumental techniques and methods. As

stated in the journal’s recently reformulated Aims and Scope [12], ABC stands for a tradition of sound analytical chemistry with high-quality statistical backup and appreciates multidisciplinary approaches, analytical innovation, and a wide scope of analytical/bioanalytical measurement methods. Thus, the ABC editors are ready to consider every non-incremental, new method development as well as the application of classical analytical methods to new problems—all as a vision based on a tradition of sound calibration and validation.

In addition to publishing traditional Research Papers, ABC introduced “Trends” (short reviews looking to the future), “Critical Reviews” (generally invited), and “Spotlights” (highlighting recent papers in an emerging area), as well as topical collections of papers solicited by invited guest editors focusing on new, emerging, and multidisciplinary topics of analytical and bioanalytical chemistry. In addition to original Research Papers, topical collections generally contain Critical Reviews and Trends articles to provide the readers with information on advances in emerging fields in analytical chemistry and the opportunity for problem-solving using methodological developments or new approaches. ABC issues regularly feature the “Analytical Challenge” and the “ABCs of Education and Professional Development in Analytical Science” [13]. In analytical and bioanalytical sciences, data evaluation is an integral part using spectroscopic, separation science, and/or sensor techniques. Thus, the analytical chemistry aspects of “omics” approaches in environmental and biological sciences and new developments in lab-on-chip and smart lab are encouraged as submissions. Recent ABC Editorials [14] and Spotlights [15] illustrate that the handling of big data in analytics, the smart lab, and extracting information not only from libraries but also from huge datasets should be considered in the vision of ABC content. These aspects align with trends in analytical/bioanalytical sciences, anywhere-care and point-of-care diagnostics, process analytical chemistry, and problems in material science. The journal works diligently to anticipate emerging analytical ideas, techniques, and problems.

As mentioned in the opening of this editorial, ABC is unique among analytical chemistry journals in that it has eight co-owner societies (plus the publisher) and nine supporting societies—all with an interest in the success of the journal. The tag line on the ABC website—*the society journal for rapid publication and global visibility of (bio-)analytical research*—emphasizes this special relationship with the societies as well as rapid publication times (average of 17 days to first decision in 2019). ABC’s success in terms of growth and quality of publications is a result of this strong partnership. Individual members of the co-owner societies receive open access to ABC as part of their membership—what a tremendous benefit to both the societies and to their members! ABC’s vision includes a desire that European analytical chemists will consider ABC as a first choice to publish their original research that falls within the scope of the journal. European

society members (and the societies themselves) should embrace ABC as their journal, thereby continuing the traditions of the former European society journals and achieving the vision of “global visibility” by welcoming the international community to publish the best original research in analytical and bioanalytical sciences.

References

1. Fresenius W. One hundred and forty years “Fresenius’ Journal of Analytical Chemistry”. *Fresenius J Anal Chem.* 2001;371:1041–2. <https://doi.org/10.1007/s00216-001-1108-7>.
2. Mathey F. Analytical and Bioanalytical Chemistry. *Anal Bioanal Chem.* 2002;372:1. <https://doi.org/10.1007/s00216-001-1166-x>.
3. Tom Dieck H. A ‘synthesis for analytics’ — creation of Analytical and Bioanalytical Chemistry. *Anal Bioanal Chem.* 2002;372:2–3. <https://doi.org/10.1007/s00216-001-1165-y>.
4. Dyllick CE, Enders P. Dear readers. *Anal Bioanal Chem.* 2002;372:4–5. <https://doi.org/10.1007/s00216-001-1167-9>.
5. Meet the editors. *Anal Bioanal Chem.* 2002;372:6–8. <https://doi.org/10.1007/s00216-001-1168-8>.
6. Pfeifer A. Meet the editors of an outstanding journal — an interview. *Anal Bioanal Chem.* 2012;402:7–13. <https://doi.org/10.1007/s00216-011-5505-2>.
7. Oberbeckmann-Winter N. Expanding the team of ABC editors. *Anal Bioanal Chem.* 2015;407:4509–10. <https://doi.org/10.1007/s00216-015-8661-y>.
8. Woolley AT, Baeumner AJ, Moreno-Bondi MC, Mondello L. Introducing three new ABC editors. *Anal Bioanal Chem.* 2019;411:2471–3. <https://doi.org/10.1007/s00216-019-01706-4>.
9. Wise SA. So, you think you want to be an editor. *Anal Bioanal Chem.* 2018;410:1407–8. <https://doi.org/10.1007/s00216-017-0824-6>.
10. Woolley AT. The only constant is change. *Anal Bioanal Chem.* 2017;409:6053. <https://doi.org/10.1007/s00216-017-0608-z>.
11. Hopfgartner G. Bioanalytical method validation: how much should we do and how should we document? *Anal Bioanal Chem.* 2020;412:531–2. <https://doi.org/10.1007/s00216-019-02334-8>.
12. Cui H, Garrigues P, Gauglitz G, Hilder E, Hopfgartner G, Muddiman DC, et al. The scope of Analytical and Bioanalytical Chemistry (ABC). *Anal Bioanal Chem.* 2018;410:649–50. <https://doi.org/10.1007/s00216-017-0743-6>.
13. Oberbeckmann-Winter N. The ABCs of challenges, education, and professional development. *Anal Bioanal Chem.* 2019;411:5909–11. <https://doi.org/10.1007/s00216-019-01951-7>.
14. Gauglitz G. Lab 4.0: SiLA or OPC UA. *Anal Bioanal Chem.* 2018;410:5093–4. <https://doi.org/10.1007/s00216-018-1192-6>.
15. Mayer M, Baeumner AJ. ABC spotlight on analytics 4.0. *Anal Bioanal Chem.* 2018;410:5095–7. <https://doi.org/10.1007/s00216-018-1191-7>.

Publisher’s note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Günter Gauglitz is Senior Professor at the Eberhard Karls University of Tübingen working on analytical and physical chemistry. He was Chairman of the Division of Analytical Chemistry of the German Chemical Society, and chaired the Europt(r)ode VIII meeting. For more than 25 years, his main scientific interests have centered on research and development in chemical and biochemical sensors, with special focus on the characterization of interfaces of polymers and biomembrane sur-

faces, spectroscopic techniques, use of spectral interferometry to monitor changes in the optical thickness of thin layers, and the effects of Fresnel reflectivity at interfaces. He is one of the founding editors of *Analytical and Bioanalytical Chemistry*.

Stephen A. Wise is Scientist Emeritus at the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland, USA. During his career at NIST, he was involved in the development of Standard Reference Materials (SRMs) for trace organic constituents in environmental, clinical, food, and dietary supplement matrices. He is currently Scientific Consultant in the Office of Dietary Supplements at the National Institutes of Health (NIH-ODS) where he provides

support for the Analytical Methods and Reference Materials Program. He is one of the founding editors of *Analytical and Bioanalytical Chemistry*.