Environ. Chem.
http://dx.doi.org/10.1071/ENnta

Environmental Chemistry

Notice to Authors

Environmental Chemistry publishes manuscripts addressing the chemistry of the environment (air, water, earth, biota), aiming to facilitate links between these often disparate aspects of environmental chemistry. Thus, papers that take an interdisciplinary approach while advancing our understanding of the chemical processes in the environment are particularly encouraged.

Although focussing on the publication of important original research and critical reviews, the journal also publishes thought-provoking Concept articles as well as essays and opinion pieces on broader issues of importance to environmental scientists. The journal is published online six times per year.

Submission of manuscripts – author's overview

To submit your paper, please use our online journal management system, ScholarOne Manuscripts, which can be reached directly through this link or from the link on the journal's homepage. If a first-time user, register via the 'Register here' link, or use your existing username and password to log in. Then click on the 'Author Centre' link and proceed.

A letter to the editor should accompany each manuscript. The letter should contain a brief justification for publication, explaining in general terms why the results are important to the broader environmental science community and how they contribute to understanding environmental processes. The letter must also include suggestions of four well qualified reviewers (full name and email address).

A signed and completed Licence to Publish form [http://www.publish.csiro.au/nid/192/aid/4027.htm] should accompany the manuscript or be faxed (to +61 3 9662 7611) or emailed soon after submission.

Reprints. The corresponding author(s) will be sent an electronic copy of their paper on publication.

Manuscript categories

Environmental Chemistry publishes a number of standard types of articles; we are, however, willing to consider formats outside these standard types. Detailed descriptions of our standard articles are provided below; in brief, Rapid Communications and Research Papers are the forum for new research results, Reviews and Highlight articles are longer and shorter overview papers, whereas Concept articles and Opinion Essays are vehicles for the discussion of new, possibly controversial ideas.

Rapid Communications. Rapid Communications are concise reports of research findings of exceptional importance and interest. A Rapid Communication should contain a brief Abstract (<60 words), but does not need an Environmental Context. The Abstract should be followed by 'free-flowing' text with no headings. The text (including figure legends, references and notes) should ideally be no longer than 2500 words (3 printed pages). Rapid Communications are 'fast-tracked' through the reviewing and publication processes, and are granted *free Open access status*. In this way, *Environmental Chemistry* wishes to encourage authors to quickly share their breakthrough findings even though the results might still be of a preliminary nature.

Research Papers. Research Papers are complete reports of original research results that have not previously been published, except possibly in the form of a preliminary communication. The manuscript should comprise the following sections, in order:

- Abstract (<250 words)
- Introduction
- Experimental
- Results and Discussion (combined or as two separate sections)
- Acknowledgements
- References

There are no word or page limitations for Research Papers – *Environmental Chemistry* encourages the reporting of full and complete studies in its Research Papers. As the journal uses an online format, colour figures and embedded videos are an accepted, and even encouraged, means for presenting data. The Introduction should provide a general context for the work, explaining its significance and indicating why it could be of interest to environmental scientists in other areas. The final paragraph should succinctly describe the aim of the current study – how will it add to what we already know? Experimental sections in Research Papers should be detailed and complete. Results should be presented and discussed in a logical, clear and balanced manner, with due reference to other relevant studies. The final paragraph should briefly re-state the main finding of the study, describe how the work has advanced the field, and provide a comment on future research directions.

Reviews. Reviews should give a concise, critical overview of a subject of high current interest, in which there have been important recent developments. Authors are encouraged to take a stance, while leading readers through the field and showing them where a field is heading. The introduction should arouse the reader's interest, describing the background, significance, and development of the field, and should be comprehensible to a broad audience. The main part of the review should be a critical analysis of recent developments, current problems, and future directions. The review should conclude with a summary of the highlights (pointing out their significance) and unsolved problems. Reviews in *Environmental Chemistry* are usually 5000–8000 words in length and contain 5–10 graphics. A passport photo and a short biography (~100 words) should be submitted with the manuscript.

Highlights. Highlight articles present recent developments in a new or rapidly changing field, and are intended to serve as an introduction and guide for the general reader. These articles can be controversial, but opposing viewpoints should – at least briefly – be presented. The article should not focus on the

author's own work. Language should be simple, novel concepts defined, and specialist terminology explained. A short abstract (<100 words) should be provided at the start of the manuscript. The text can be written in a free-flowing format with or without headings as the author wishes. The significance of and motivation for the work should be followed by a succinct presentation of the important results, without the extensive technical details required for an original article such as a Research Paper. A concluding paragraph should point to possible future directions. All of this should be presented in a manuscript containing up to 2000–3000 words and three graphics.

Concepts. Concept articles present a new way of thinking about known phenomena, or a new way of interpreting existing data. Although the theory may not be fully proven, or accepted, there should be significant evidence to support it, and the author should present convincing arguments based on that evidence. The author should also make reference to the presently accepted view for readers' information. Speculation is encouraged, as long as it is based on sound reasoning. Language used should be simple, novel concepts defined and specialist terminology explained. A short abstract (<100 words) should be provided at the start of the manuscript. Thereafter, the author may choose headings they deem appropriate for clearly conveying their message. The manuscript should have a maximum of 5000 words and five graphics.

Perspectives. Perspective articles present a novel view on a topical issue of current international concern. The author, usually a recognised authority in the field, is welcome to take a controversial standpoint, but overall, the article should provide a clear and balanced discussion to inform non-specialist readers about the issue and its new developments. The author can make specific and practical proposals, either setting an agenda or proposing better options. The length is usually 1000–1500 words. Neither an Abstract nor an Environmental Context is required for Perspective articles; figures can be included where appropriate. A passport photo and a short biography (~100 words) should be submitted with the manuscript.

Manuscript preparation

We encourage authors to prepare their manuscript carefully so that the information it contains is easily conveyed to readers. Authors not fluent in English are urged to consult native English-speaking colleagues before submitting manuscripts. We also encourage the use of professional scientific editing services, such as:

- Cambridge Language Consultants (http://www.camlang.com/)
- Nature Publishing Group (http://languageediting.nature.com/)

In addition to the specific requirements described above for the various types of manuscripts, manuscripts submitted to *Environmental Chemistry* should conform to the following format.

Line and page numbering. All lines and pages should be numbered (this greatly simplifies the reviewers' task of conveying specific comments to the author via the editor).

Title. The title should succinctly capture the manuscript's main message.

Authors and affiliations. The full names (first and last) of all authors should be given, along with their complete Institute addresses. Corresponding (contact) author should be indicated by '*'; the email address of the corresponding author must be included. The addresses listed should be the institution(s) where the work was conducted; if this is different from the present address, please record the present address in a separate and subsequent affiliation.

Environmental context. This is a three-sentence paragraph of 50 to 80 words written for interested non-experts, such as journalists, teachers, government workers, etc. The text should be free from scientific jargon, and written at the level of an article in a good newspaper. Your first sentence should engage the reader, convincing them that this is an important area. The second sentence should introduce the problem addressed in the paper, and state your main discovery. The final sentence should describe how the results fit into the bigger picture. An environmental context is not required for Rapid Communications or for Perspective articles.

Abstract. The Abstract should be concise and clearly convey the main outcomes from the paper. Authors should bear in mind that many more readers will see the abstract than will read the whole paper, and hence it is an extremely important part of the paper. The abstract should give a brief rationale for the work, outline the results, and convey the paper's main points and any conclusions. It should end with a sentence that puts the main finding into general context so it is clear how the results described in the paper have moved the field forwards.

Text. Every manuscript should be written in a general style that will allow the main points to be appreciated by a broad audience across the chemical, environmental, and biological sciences. Be conscious of using clear language that drives your story forward. Acronyms and abbreviations should be used sparingly, and defined after their first appearance. Similarly, less common symbols should be defined on their first appearance; a selection of common abbreviations is provided on our web page. Chemical compounds should be labelled numerically, consecutively, and in bold face.

Experimental methods and physical data. Procedures should be clearly documented, logically presented, and the writing concise and unambiguous. It should allow others to repeat the work and to see if and where their results differ from yours. Wherever possible, symbols should conform to the recommendations of the International Union of Pure and Applied Chemistry – see IUPAC's recommendations in the 'Green Book'[A]. Use SI data and negative indices (ms^{-1} rather than m/s). If units other than SI units must be used, their first appearance in the manuscript should be followed by a footnote or parenthesis giving the conversion factor.

Reporting of speciation data. It is now widely accepted that the chemical speciation of trace elements will greatly influence their biological effects. Nonetheless, speciation data can often be highly variable and dependent on the element, the matrix and the analytical technique that has been employed. As *Environmental Chemistry* is anxious to promote a high standard for the treatment of speciation within its pages, the following guidelines have been prepared in order to assist authors in preparing research papers that include speciation measurements

(i) Papers that are submitted to the journal in the field of trace element bioavailability will generally require that speciation measurements or calculations have been performed.

(ii) For papers in the field of trace element speciation, authors are strongly encouraged to employ terminology that is consistent with accepted scientific nomenclature. Among other points, the term 'speciation' should be used in the context of a chemical species distribution to distinguish compounds that vary in isotopic composition, conformation, oxidation or electronic state or in the nature of their complexed or covalently bound substituents The term 'speciation' should not be confused with 'fractionation', which refers to a classification based upon the physical or chemical properties of the sample.

[A]I. Mills, T. Cvitas, K. Homann, N. Kallay, K. Kuchitsu, *Quantities, Units and Symbols in Physical Chemistry, 2nd edn* **1993** (Blackwell: Oxford).

(iii) When working with equilibrium-based speciation techniques (e.g. ion selective electrodes, Donnan membrane technique) or techniques that involve molecular discrimination (e.g. liquid chromatography-mass spectrometry, and synchrotron-based techniques in the solid phase – soils and sediments – and to biological samples), rigorous QA/QC procedures should be in place. As speciation 'standards' are still rare, the analyst should make thorough use of equilibrium modelling (with reliable or updated thermodynamic constants) and inter-laboratory comparisons to validate experimental results. For dynamic techniques, control checks on the day to day performance of lability measurements should be considered. Systematic assessments of the uncertainty associated with speciation data should be undertaken. For example, method performance should be evaluated by documenting the effects of interferences and significant sources of error.

(iv) Mass balances should be performed, whenever possible, in order to demonstrate that the sum of all measured species or fractions corresponds to the total elemental concentration as determined on the original sample.

(v) When analysing natural samples for species distributions, great care needs to be taken when samples are removed from the natural environment. *In situ* analysis is preferred for speciation measurements. Nonetheless, when required, sampling and sample preservation techniques should minimise changes to the samples.

(vi) When working with dynamic speciation techniques, the use of terms 'labile' and 'inert' should always reflect the analytical techniques that were employed. For example, analytical signals corresponding to labile metal will rarely be the same when measured by techniques that function with different diffusional time scales, such as diffusive gradient in thin films, microelectrodes. Authors are also strongly encouraged to take additional care when interpreting speciation results in order to correctly reflect chemical species that are being detected by the analytical technique (e.g. voltammetry does not generally measure solely free metal).

(vii) When working with dynamic speciation techniques, the use of terms 'labile' and 'inert' should always reflect the analytical techniques that were employed. For example, analytical signals corresponding to labile metal will rarely be the same when measured by techniques that function with different diffusional time scales, such as diffusive gradient in thin films, microelectrodes. Authors are also strongly encouraged to take additional care when interpreting speciation results in order to correctly reflect chemical species that are being detected by the analytical technique (e.g. voltammetry does not generally measure solely free metal).

(viii) Sample manipulation (spiking, etc.) should take into account both thermodynamic and kinetic constraints. For example, spikes should never exceed thermodynamic solubility products and sufficient time should be left for chemical species to equilibrate in the sample.

Equations and mathematics. Equations should be numbered sequentially. Please avoid double sub-or superscripts. We recommend following the formats outlined in the 'Green Book' (non-italic for constants (e, π, i), italic for variables, bold italic for vectors and matrices).

Acknowledgements. Here, authors can acknowledge other scientific and technical contributors to the work, and funding support. Effusive comments or acknowledgements to anonymous reviewers are not appropriate.

References. Use the Vancouver style, but include the manuscript title. In-text references are presented numerically, superscript in square brackets, after any punctuation. Citations should appear in numerical order throughout the text, consistent with the reference list at the end of the main text body. The reference list should also have reference numbers in square brackets, and follow these guidelines: Initials listed before surnames; commas between authors' names; no 'and' between the penultimate and final name in the list; the final author name should be followed by a comma followed by the manuscript title in normal font; the journal title should be italicised, followed by the year of publication in bold, the volume number in italic, and the page number upright. Books follow the order: authors – title – editors – year, volume, chapter, page – publisher. Computer programs and patents follow essentially the same order with logical substitutions. Internal publications, conference proceedings, and web pages should be avoided.

Examples[1–3]

[1] L. Charlet, A. Manceau, Arsenic(III) oxidation by birnessite and precipitation of manganese(II) arsenate. *J. Coll. Interf. Sci*. **1992**, *148*, 443.

[2] S. Peiffer, Reaction of H_2S with ferric oxides, in *Environmental Chemistry of Lakes and Reservoirs* (Ed. L. A. Baker) **1994**, pp. 371–390 (American Chemical Society: Washington, DC).

[3] L. A. Marshall, K. E. Steiner, G. A. Schieser, *U.S. Patent 4 889 858* **1989**.

Authors are advised to choose references carefully and frugally – make each reference count. Their purpose is to support statements made in your paper, and to direct the reader to further information of most relevance, should they require it.

Tables. Table numbers are designated by Arabic numerals. Tables consist of three horizontal rules, with box headings centred over each column. Material in the body of the table is usually justified on the left-hand side. Numerical data are usually justified on the decimal point. Footnote references within tables are superscript capital letters, and footnotes appear at the bottom of the table, in the same size text as the body of the table.

Graphics. Figures and schemes should be of sufficient quality to allow direct reproduction. Single-column (85 mm) width is preferred; double-column figures are acceptable where necessary. Numbers, letters, and symbols should be of the correct size to be 1.8 mm (8 pt) after reduction. Images with grey tones or colour should be provided as high-quality originals, and as electronic files in (ideally) TIFF, EPS, or PDF formats. For scanned photographs ensure the resolution is at least 300 dpi and for colour images use CMYK with the highest resolution possible. Image quality may be improved between the initial (for reviewing) and final (for publishing) manuscripts.

Accessory materials. Material or data that are not essential in the printed paper but could be useful to other researchers, may be submitted with the manuscript as accessory material. In this case, a note to this effect should be included at the end of the manuscript. Accessory material will be made available from our website when the manuscript is published.

Questions and correspondence

Submission, assessment, and production matters:
publishing.env@csiro.au
Submission and assessment matters:
Prof Kevin A. Francesconi (Editor-in-Chief)
(kevin.francesconi@uni-graz.at)