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Beyond the International Year of Crystallography

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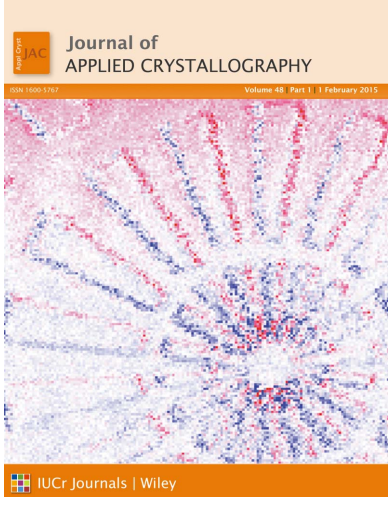
It is now one year since all International Union of Crystallography (IUCr) journals became online only, and this is just one of the developments during the International Year of Crystallography, IYCr 2014. Perhaps most conspicuously, IUCr's new flagship journal, *IUCrJ*, a fully open access journal, has now completed its first year. Readers should also note the upcoming launch of the new IUCr Journals web site. The web pages for each journal will in future cover more recent news items and highlighted articles, as well as noting most cited recent papers *etc.* Announcements will also appear here more regularly (and on the main IUCr home page) for upcoming special issues and other topics of interest. Other changes and ongoing developments are more specific to *Journal of Applied Crystallography* (*JAC*), and it is now time to share some of these with you.

First of all, we wish to emphasize that *JAC* will continue to focus on the application of crystallography and crystallographic methods in all their forms (to crystalline and noncrystalline materials), and the instrumentation, techniques and other factors involved. As stated in the journal's expanded scope statement, many research topics in condensed matter research, materials science and the life sciences make use of crystallographic methods to study crystalline and noncrystalline matter with neutrons, X-rays and electrons. Articles published in *JAC* focus on these methods and their use in identifying structural and diffusion-controlled phase transformations, structure–property relationships, structural changes of defects, interfaces and surfaces, *etc*. Developments of instrumentation and crystallographic apparatus, theory and interpretation, numerical analysis, and other related subjects are also covered. We welcome high-quality papers focusing on industrial applications of crystallography. We have recently appointed three new editors with expertise in the area of free-electron lasers, and we look forward to receiving papers focusing on the deeper implications for applied crystallography raised by the measurement paradigms that such new facilities offer. Furthermore, the journal is the primary place where crystallographic computer program information is published.

We note that two important statistics have emerged during 2014: our latest published impact factor for 2013 is 3.95 (see http://ip-science.thomsonreuters.com/mjl/#journal_lists); and two computer program papers published in *JAC* (Kraulis, 1991; Laskowski *et al.*, 1993) are included in the recently published listing of the 100 most cited scientific research papers of all time (Van Noorden *et al.*, 2014), each having been cited well over 13 000 times. Both these achievements are of course a testimony to the dedication and hard work of our many Co-editors, reviewers and authors over the years. Our challenge, in a changing world of scientific journal publication, is to maintain and enhance this record through a rigorous but fair peer review system. In this connection, we draw prospective computer program authors' attention to the revised *Notes for Authors*, which include updated requirements for such papers. While additional requirements pertain to computer program papers, such papers remain among the most highly cited papers published in *JAC*. Other important changes for *JAC* are detailed below.

Multiple Main Editors. Over the past year most IUCr journals have appointed multiple Main Editors and, for *JAC*, there are now three of us. Having three Main Editors provides greater efficiency in all editorial matters pertinent to the long-term health of the journal. This includes the appointment of new Co-editors, selection of articles to highlight, agreeing Lead and Feature Articles, choosing special issues, deciding appeals on review decisions, checking proofs, and of course working with the IUCr Journals Management Board on planning the long-term development of the journal. At the present time, the Main Editors do not preselect regular paper submissions prior to assignment to a Co-editor (*i.e.* assess whether articles should be rejected without being



sent to peer review). However, we may need to preselect papers as the paper submission rate continues to increase in the future.

Commentaries and highlights. Readers will note that, with the change to online only publication, the cover art for the journal usually changes with every issue. This is one way in which papers of particular interest within an issue can be highlighted at the discretion of the editors. Another way significant papers can now be highlighted is by including a brief commentary on the paper, and its context in the current field, within the same journal issue. Commentaries (citable themselves and including relevant references) are solicited from authors other than the authors of the paper being highlighted, and at the discretion of the Main Editors.

Lead and Feature Articles. While *JAC* tends not to publish full-length review articles in the traditional sense, we are increasingly publishing Lead and Feature Articles. Such articles focus on issues of current crystallographic interest (*e.g.* mini-reviews) or on new and upcoming fields of applied crystallography. These are either solicited by the Main Editors or proposed by a prospective author. In either case, the author will be asked to submit a synopsis of the proposed article for the Main Editors' approval. In general, this needs to include a proposed introduction that will be accessible to readers across the whole field of crystallography. Following approval of the synopsis, the full article should be prepared according to an agreed schedule. Once submitted, such articles will be rigorously reviewed, in the usual way, by at least two independent reviewers.

Special issues. While *JAC* has not to date published standalone theme-based special issues, we do publish select special issues associated with major conferences of interest to applied crystallographers. We should emphasize that the traditional special issue containing conference proceedings, *i.e.* a large number of short conference papers, is no longer viable for an international peer-reviewed first-level research journal. Many short conference-style papers within such proceedings may contain little of substance, and the effect on the journal's overall impact factor can be significant. Instead, through prior agreement among conference organizers, the Main Editors of *JAC* and the IUCr Editorial Office, it is sometimes possible to develop a small special issue containing 20–30 selected full-length Research Papers associated with a conference. Generally, such a special issue requires the temporary appointment of Guest Editors (one being a regular Editor or Co-editor of the journal) and requires the conference organization to contribute towards the cost of open access. A pre-selection process may also be needed, given the significantly larger number of potential submissions than there are available places in the special issue. Experience to date suggests that the publication standard required for acceptance in such select special issues is at least as high as for regular journal submissions. Accepted papers are first published in two to three successive regular journal issues, then collected together and made available as a 'virtual' special issue.

Teaching and Education. *JAC* welcomes a small but strategically important category of papers in the area of Teaching and Education. For a number of years, Katherine Kantardjieff has served as our Co-editor for Teaching and Education, in addition to her normal Co-editor workload. We are deeply indebted and grateful to Katherine for her careful work in this area. As she comes towards the end of her term as Co-editor, we are pleased to announce that one of our other existing Co-editors, Juanma Garcia-Ruiz, has kindly agreed to take on the responsibility for Teaching and Education articles. Juanma will work with Katherine over coming months to effect a smooth transition.

Open access. *JAC* remains a hybrid journal. Authors of accepted papers have the option to retain access to their paper based on journal subscription, or to secure open access to their paper on payment of a charge to the IUCr. The cost per article of open access for a paper published in *JAC* (or any other IUCr journal) remains significantly less than that for articles published in most other journals of comparable impact. Open access papers generally attract higher numbers of citations.

We end by noting that many challenges lie ahead for scientific publishing, especially with regard to subscription-based access *versus* open access, the increasing demand to archive and provide access to research data, and the general demands placed on increasingly busy reviewers to provide the core support for a fair and rigorous review system. We cannot predict how things will change in future, in response to these challenges. Regarding data, we urge all authors to ensure the long-term integrity of and potential access to the data and metadata on which their papers are based. Regarding the review system, authors are welcome to suggest reviewers for their papers (with valid contact information). However, for such suggestions to be useful, suggested reviewers should have published in the field but not have the same affiliation as *any* of the paper authors, nor should they be current close or long-term collaborators with *any* of the authors. Finally, to protect the anonymity of potential reviewers, at least five reviewers should be suggested. Editors and Co-editors have the obligation to check these points and the right to choose whoever they judge fit to request a review from, whether suggested by the authors or not.

With these points in mind, we believe that *JAC*, in collaboration with its authors, editors, reviewers and readers, and of course the dedicated support of the staff of the IUCr Editorial Office, is well placed to meet the challenges ahead.

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