Publication Policy for the Swedish Internal Combustion Engine Consortium

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Introduction

This document concerns research publications by the three university-based IC engine research centers in Sweden: the Competence Center for Gas Exchange (CCGEx) at the Royal Institute of Technology in Stockholm; the Combustion Engine Research Center (CERC) at Chalmers University in Gothenburg; and the Competence Center for Combustion Processes (KCFP) at the University of Lund in Lund. All three centers are members of the Swedish Internal Combustion Engine Consortium (SICEC), together with Volvo GTT, Volvo Car, and Scania.

SICEC publication policy

- Publications originating from within a center should acknowledge support from the center at the conclusion of the article.
- There is a formal requirement (found in the center contracts) that authors will circulate papers among the industrial representatives before submitting the paper. That requirement should be followed in full.
- Publications and presentations at conferences often do not include a copyright (e.g. meetings of the Institution for Liquid Atomization and Spray Systems (ILASS), meetings of the Scandinavian/Nordic Section of the Combustion Institute, posters to the Combustion Symposium etc.). These cannot be considered rigorously reviewed papers because there is often just one person who looks at an abstract and decides whether or not the topic is appropriate. In some cases the review is a bit more stringent, but papers to such conferences cannot be equated to an archival publication ('archival' meaning available in the library archives).
  SICEC strongly encourages researchers to participate in, and to present their work at, such conferences for several reasons:
  - One can present all or a portion of what will become an archival publication, to get the response of conference attendees (like a first paper review before submitting the paper) and thus to improve the quality of the paper before submission to a journal. It is fully legitimate to publish this same information in a journal because the conference proceedings are not copyrighted.
  - It is very helpful to see what others are doing in the same field, to adapt SICEC work to new findings and to generate new research ideas.
  - Participation, especially also engagement in the meeting organization, lifts the visibility of each center and improves the reputation of SICEC in general.
- Conferences with copyrights (e.g. SAE, AIAA, International Combustion Symposium) are also good venues for participation but one cannot publish that information elsewhere.

- SICEC researchers will submit articles to the SAE conferences whenever the work is primarily about engines and of most interest to the industrial partners. All SICEC authors make a commitment to produce the highest possible quality papers for the SAE.
- SAE holds the copyright to the papers presented at conferences, but they also have archival journals (the collected SAE International Journals). If invited by SAE, one can submit a paper from an SAE conference to those journals. SICEC researchers will strive to produce papers that can be taken forward to the SAE International Journal of Engines (unfortunately that journal does not yet have an impact factor).
- Otherwise, non-copyrighted engine-related material can also be submitted to Combustion Science and Technology , the International Journal of Engine Research, the International Combustion Symposium (for publication in the Proceedings of the Combustion Institute), and so forth.
- Work in other areas (e.g. sprays, diagnostics, chemistry, modeling etc.) can follow the two-step process:
    - Spray work can be presented at ILASS/ICLASS or a combustion conference and then submitted to Atomization and Sprays, Experiments in Fluids, the International Journal of Multiphase Flow, the International Combustion Symposium (for publication in the Proceedings of the Combustion Institute), Physics of Fluids, or the Journal of Fluid Mechanics for example.
    - Diagnostics work can be presented at ILASS/ICLASS, an OSA meeting, or a combustion conference. Afterwards it can be submitted to Applied Physics B, an OSA journal (Optics Express, Optics Letters, Applied Optics, or JOSA B), the International Combustion Symposium (for publication in the Proceedings of the Combustion Institute), or Combustion and Flame for example.
    - Chemistry can be presented at a combustion meeting (e.g. even the International Colloquium on the Dynamics of Explosion and Reactive Systems) and then submitted to Combustion and Flame, the International Combustion Symposium (for publication in the Proceedings of the Combustion Institute), Combustion Science and Technology, Journal of Physical Chemistry or any of the other physical chemistry journals.
    - Modeling can be presented at a combustion meeting (e.g. even the International Colloquium on the Dynamics of Explosion and Reactive Systems) and then submitted to Combustion and Flame, the International Combustion Symposium (for publication in the Proceedings of the Combustion Institute), Combustion Theory and Modelling, Flow Turbulence and Combustion and so forth.
    - Other journals of interest include: Fuel, Progress in Energy and Combustion Science, Control Engineering Practice and so forth.
    - This is not an exhaustive list of conferences and journals; it is just a set of examples.

SICEC web publication policy

- SICEC centers will post information about publications to their respective web sites:
    - Centers should decide how to inform the public – via publications lists at personal sites for center members, at the center site under a link entitled "publications", or via other means.
    - Publications with copyrights cannot be distributed by the author unless the author paid fees to the journal for open access. If the author did pay for open access, they are encouraged to provide access to the paper at the center web site. If open access was not paid for, a link to the article at the journal itself is most appropriate.
    - Alternatively, one can often post the final draft of a paper that was submitted to a journal and ultimately published. Such permission varies from journal to journal. If permitted, one still cannot provide the journal title and citation on the draft. One can provide citation information at the web page together with a downloadable draft.
    - Non-copyrighted material (e.g. papers to non-copyrighted conferences, posters, powerpoint presentations etc.) can be freely posted to web pages, but centers are encouraged to avoid making web pages too complicated and overloaded.

Background

Members of the international scientific advisory boards (ISAB's) for the university centers encouraged the center staff to publish in more highly ranked journals; meaning that they believe the quality of the research is at a sufficiently high level to achieve this goal and so it is unwise not to do so. The board of SICEC therefore decided that a common publication policy should be developed.

Journal rankings ("impact factors") are usually based on the average number of citations per article in each journal, although some ranking systems take a step further by giving more weight to citations in highly ranked journals vs. low ranked journals. An article is thought to have more impact if it is highly cited, especially if cited in highly ranked journals. The review process for highly ranked journals is indeed more rigorous and much more time consuming. Hence, a paper in a highly ranked journal will most likely have better quality and hence be cited more often – meaning it is a more significant contribution of new knowledge. When a research center has many such publications it has more international visibility and it is highly respected, although it takes time to build up such a portfolio. It can be nearly impossible to publish in the very highly ranked journals, however, which is why some authors try to avoid them. The performance of individual researchers at their home institutions is often reviewed based more on the number of publications than on the impact factor of the journal. The incentive on a campus, or within the proposal review process, can sometimes steer researchers away from highly ranked journals,

especially since the differences in impact factor between two journals can sometimes be fairly small.

At issue

The ISAB comments had to do with two cases: 1) Publications at SAE conferences, which have no impact factor and are thus viewed by some academics as having no impact, and 2) Publications in mid-level journals.

One can sometimes find fairly weak publications at the SAE conferences, and that is the root of the SAE issue raised by the ISAB. A quick survey of the established engine research programs in the US indicates that none of them have a formal publication policy, but they are fairly uniform in their viewpoints. Perhaps the established viewpoint from the Engine Research Department at the Combustion Research Facility, Sandia National Labs would prove useful. They interact frequently with industry, and their industry partners emphasize work presented at the SAE conferences. Often industry doesn't have access to other published materials, and they prefer to have the Engine Research Department publications in the SAE database to which they do have access. The CRF itself (the larger organization) is a visitor facility of the US Department of Energy Office of Basic Energy Sciences (BES). BES emphasizes publications in the absolute highest ranked journals like Science and Nature. There has thus been a culture clash within the CRF, and it has been resolved. Together the scientists within the Engine Research Department have agreed to submit their work to SAE conferences whenever the work is primarily about engines and of most interest to their industrial partners. They have all made a commitment, however, to produce the highest possible quality papers for the SAE. John Dec's famous Diesel combustion article is a good example. Their work is highly regarded because they strive to reach the highest quality in each SAE publication. Alternatively, if a CRF article is focused more on a diagnostic method, spray physics, or chemistry for example, they submit that work to more highly ranked journals.

With respect to the comment, about mid-ranked journals (e.g. Experiments in Fluids), the ISAB members encourage SICEC researchers to consider submission to higher ranked journals (e.g. Physics of Fluids). That is a good suggestion unless the author has specific, strategic reasons for submission elsewhere.

- A representative example list of journals and impact factors (from ISI web of knowledge):

Journal	Impact factor
Nature (as an example of the highest level)	39
Science (as an example)	31
Progress in Energy and Combustion Science	15
Combustion and Flame	3.6
Fuel	3.6
Optics Express	3.5
Optics Letters	3.4
Journal of Physical Chemistry	3.0
Proceedings of the Combustion Institute	2.4
IEEE Control Systems Magazine	2.4
Journal of Fluid Mechanics	2.2
Physics of Fluids	1.9
Applied Physics B	1.8
Applied Optics	1.7
International Journal of Multiphase Flow	1.7
Control Engineering Practice	1.7
Experiments in Fluids	1.6
Combustion Theory and Modelling	1.5
Flow Turbulence and Combustion	1.3
Combustion Science and Technology	1.0
Atomization and Sprays	0.5
International Journal of Engine Research	0.5
SAE International Journal of Engines	not listed at ISI

There is not a lot of difference below Progress in Energy and Combustion Science until one gets to Atomization and Sprays. But, when submitting to a journal it would be worthwhile to check its impact factor before submitting (e.g. Atomization and Sprays would not be a good first choice).