

Scope and Editorial Policy

(Revised January 2013)

Introduction

Organic Process Research & Development is a journal which was published jointly by the American Chemical Society and the Royal Society of Chemistry from 1997 to 2001. It is now published by the American Chemical Society with a planned 12 issues per year. The objectives are to report current research and development (R&D) topics related to process chemistry in the fine and specialty organic chemicals area, subjects not previously covered in depth by other journals.

Scope of Journal

The Journal reports original work in the broad field of process chemistry encompassing aspects of organic chemistry, catalysis, analytical chemistry, and chemical engineering, with special focus on the development and optimization of chemical reactions and processes and their transfer to a larger scale, via large laboratory and pilot-plant operations, for manufacture.

The Journal aims to cover R&D in the fine organic chemicals and specialty chemicals industries (including pharmaceuticals, agrochemicals, dyestuff and photographic chemicals, flavors and fragrances, electronics, intermediates, food additives, and specialty polymers) and academic chemistry related to work in these industries. Some R&D in commodity chemicals, petrochemicals, and polymers may also be appropriate. The Journal will concentrate on the batch/semi-batch chemical process industries but welcomes reports on R&D aimed at continuous processes.

The journal encourages researchers to consider the environmental consequences of the way in which they perform their experiments and to minimize waste. Thus, submissions including quantitative measures of green chemistry performance such as mass intensity/efficiency, atom economy, and E-factor are particularly welcome.

Starting in 2012 the policy on use of organic solvents has been changed to discourage scientists from using particular solvents and to encourage them to seek alternatives wherever possible; papers containing **strongly undesirable solvents** (e.g., benzene, carbon tetrachloride, chloroform, HMPA, carbon disulphide, etc.) will only be considered if accompanied by an analysis of alternatives or if a convincing justification for such use is presented.

Areas of Interest

Organic Process Research. Authors are encouraged to discuss synthetic route strategy and design, giving reasons and rationale (particularly issues relating to scale-up and manufacture) for choice of reagents, solvents, conditions, etc., and highlighting unexpected differences observed as processes are scaled up.

Organic Process Development. Authors may discuss the development and optimization of research laboratory methods to make them more suitable for scale-up and manufacture. Aspects which may be important include yield improvement, cost reduction, improvement in space-time

yield, quality issues, structure and control of impurities, changes in yield/quality with reaction conditions, choice of solvent, workup and product isolation, safety, and environmental considerations. Authors may wish to include details of statistical methods of optimization used (e.g., experimental or factorial designs, simplex methods, response surfaces).

Other suggested topics include conversion of stoichiometric processes to catalytic methods and comparisons of methodologies for achieving a synthetic transformation, based on scale-up considerations (including safety and environmental concerns).

Scale-Up Issues. Included in this area are topics related to choice of equipment for scale-up, chemical reaction engineering issues (heat transfer, kinetics, mass transfer, mixing and agitation, unit operations), process control and instrumentation, separations technology, and process modeling.

Safety Issues. This section will include papers discussing handling of toxic products and byproducts and thermal hazard testing of processes (including detailed studies on particular chemical reactions). Experiences of incidents and accidents, potential runaway reactions, and reactions where control is a problem (pressure buildup, excessive gas evolution, etc.) are particularly welcomed, especially where a detailed follow-up investigation has been carried out. The editors encourage scientists and engineers to publish this data to disseminate information as widely as possible, thus preventing further incidents and accidents elsewhere.

Environmental, Waste Minimization, and “Benign” or “Green” Chemistry Related Topics. Authors are encouraged to report their solutions to potential environmental issues in the fine chemicals industry, both reduction-at-source strategies and “end-of-pipe” solutions.

Legislation, Regulatory, and Patent Issues. The Journal will try to highlight new legislation or changes which affect process R&D in the fine chemicals industry. However, authors are encouraged to report on their organization’s approach to compliance with new or existing legislation on safety, environmental, and quality issues, GMP, validation of processes and equipment, etc., or on patent issues.

Miscellaneous. In addition to these topics, the Journal encourages papers dealing with other subjects which fall within the scope of the objectives of the Journal. Examples not listed earlier include the following: the translation of a batch or semi-batch process to a continuous process, crystallization and polymorphism of new products, enzymatic methods for production of fine chemicals, new technologies, multipurpose techniques, and pilot plant design.

Types of Manuscripts

Full Paper. A full paper is a detailed paper with full experimental details describing results of process R&D and/or scale-up to pilot plant with discussion of key issues arising from the work. The experimental details should be described on the *largest* scale carried out.

Technical Note. A technical note is a concise account of a study of limited scope (e.g. a detailed study on the optimization of a single chemical reaction or a new analytical methodology). Full experimental details should be provided.

Communication. A communication is a brief description of a piece of work which may be a fragment of a larger project but is essentially complete. This could be a brief description of an optimized synthesis of one compound, a safety elaboration on a process, etc.

Disclosure or Summary Lecture Transcripts. The Editors recognize that companies may not be willing, for reasons of confidentiality, to publish full details of their industrial R&D but often are willing to allow results to appear, often at a symposium lecture. While the Editors' preference is for Full Papers with experimental work, the Journal will allow publication of "disclosures" or lecture transcripts, even though experimental detail may not be present. Of interest to readers will be the strategy behind the R&D and scale-up and safety and environmental issues which are discussed in these papers.

Concept Article. A concept article is an article of a more general nature, which may have a "teaching" element or an element of a philosophical nature describing ideas or concepts or how to carry out a particular aspect of process R&D scale-up in a better manner.

Review. A review may be an in-depth literature review (e.g. a review of methods for a functional group transformation), discussed from a process R&D viewpoint, that sets the topic in perspective. Alternatively, it could be a survey of unpublished work (methods of making a key agrochemical or pharmaceutical used within one company) or a provocative discussion of a key issue in process R&D or chemical engineering (e.g., regulations, handling a particularly difficult reagent, choice of equipment in a pilot plant, separation techniques, analytical methodologies, process control methods, sampling of reactors, mixing).

Technology Report. These reports are short notes on the use of new techniques or equipment in process R&D or pilot plants, compiled by an "independent" user (not a manufacturer of equipment).

Safety and Environmental Report. The Journal encourages reporting of data on safety and environmental issues relating to translation of laboratory methodology to a manufacturing process. Detailed reports on, for example, potential runaways or incidents are welcome. The Editors may reprint data from other publications (with permission) if it is felt to be of interest to the readership.

Correspondence. Comments on articles previously published in the Journal are welcome in this section. Addenda, corrigenda, and reinterpretations by the original author or others may also be included. In the case of the latter, the original authors will be given the chance to reply to any criticism. This section could include specific or unusual findings of interest to the readership on stability or degradation problems, raw material quality issues, formulation problems, etc., not covered in other sections.

All manuscripts will be sent to the referees for peer review.

The Editors' preference is for Full Papers with experimental detail, whenever possible.

Special sections or issues of the Journal may be devoted to relevant symposia or to invited papers on selected themes.

Notice: Documents accepted for publication in ACS Journals will be posted on the Web as soon as they are ready for publication as ASAP, that is, when galley proofs are corrected and all author concerns are resolved, or as Just Accepted if selected. A Just Accepted manuscript is published online upon acceptance and usually appears within 30 minutes to 24 hours of acceptance. Articles are published ASAP generally within 4 working days of receipt. Authors should take this into account when planning their intellectual and patent

activities related to a document. The actual date on which the document is first posted on the Web is recorded in a separate line at the bottom of the first page of the document in the published issue.