



RADIATION PHYSICS AND CHEMISTRY

The Journal for Radiation Physics, Radiation Chemistry and Radiation Processing

AUTHOR INFORMATION PACK

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DESCRIPTION

Radiation Physics and Chemistry is a multidisciplinary journal that provides a medium for publication of substantial and original papers, reviews, and short communications which focus on research and developments involving **ionizing radiation** in **radiation physics**, **radiation chemistry** and **radiation processing**.

Radiation Physics and Chemistry aims to publish articles with significance to an international audience, containing substantial novelty and contributions to science. We expect that articles present new insight or hypothesis testing, that they focus on radiation effects or applications of ionizing radiation, provide uncertainties and statistical analysis where relevant, and present their findings in context with discussion of past and recent literature. The editors reserve the right to reject, with or without external review, articles which do not meet these criteria. This could include articles which are very similar to previous publications, except that target substrates, materials, analyzed sites or experimental methods have been changed.

A fuller though not exhaustive list of topics that are considered for publication include:

Radiation Physics

Fundamental processes in radiation physics

- Interaction mechanisms for example scattering and absorption of photon and particle radiations
- Attenuation coefficients
- X-ray fluorescence
- Cherenkov effect
- Polarization
- Effects of periodic structures (Bragg diffraction, channelling, parametric x-radiation, etc)
- Mathematical methods in radiation physics, reference data

Radiation sources and detectors

- Accelerator and radionuclide spectra and other properties
- Radiation fields from point and extended sources
- Detector response functions
- Basic physics of Dosimetry
- Radiation transport
- Buildup factors

Radiation Chemistry

- Ionizing radiation induced ionic and radical reactions
- Kinetics and mechanism of radiolysis reactions
- Pulse radiolysis technique and measurements
- Nanoparticle production by ionizing radiation
- Radiation induced chain reactions, polymerization
- Irradiation effects on polymers
- Dose and dose rate effects
- LET effects on chemical reactions
- Pollutant removal by ionizing radiation
- Computational models on radiation chemical reactions

Papers on photochemistry, microwave chemistry and thermochemistry are believed to belong to the scope of RPC only if they have strong relevance to radiation chemistry. EPR papers will only be considered for publication when the method is used for clarifying radiation chemical processes, e.g. by determining the nature of the transient intermediates. Radiochemistry papers such as tracer technique, radon or other radionuclide measurements, isotopic constitutions fall outside the scope of the journal.

Radiation Processing

Radiation Sterilization

- Microbiology
- Toxicology
- Biocompatibility
- Validation

Food irradiation

- Microbiological quality
- Chemical effects
- Nutrition
- Detection induced radioactivity

Polymers

- Synthesis
- Polymerization
- Curing
- Grafting
- Crosslinking
- Degradation
- Composites

Environmental

- Effluent gas
- Waste water
- Water purification
- Toxin reduction
- Sludge
- Recycling of wastes

Radiation effects

- Semiconductors
- Gemstones
- Crystals
- Ceramics

Dosimetry and process control

- Dosimeter systems
- Analytical instrumentation

- Environmental influence
- Measurement uncertainty

Radiation sources and facilities for radiation processing

- Electron Accelerators
- Gamma and x-ray facilities
- Safety issues
- Transport of radioisotopes

AUDIENCE

Chemists and physicists working with ionizing radiation and its applications.

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The Journal for Radiation Physics, Radiation Chemistry and Radiation Processing

A multidisciplinary journal linking science and industry

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Radiation Physics and Chemistry aims to publish articles with significance to an international audience, containing substantial novelty and contributions to science. We expect that articles present new insight or hypothesis testing, that they focus on radiation effects or applications of ionizing radiation, provide uncertainties and statistical analysis where relevant, and present their findings in context with discussion of past and recent literature. The editors reserve the right to reject, with or without external review, articles which do not meet these criteria. This could include articles which are very similar to previous publications, except that target substrates, materials, analyzed sites or experimental methods have been changed.

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For Radiation Physics: C. Chantler

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Electronic artwork

General points

- Make sure you use uniform lettering and sizing of your original artwork.
- Preferred fonts: Arial (or Helvetica), Times New Roman (or Times), Symbol, Courier.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Indicate per figure if it is a single, 1.5 or 2-column fitting image.
- For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.
- Please note that individual figure files larger than 10 MB must be provided in separate source files. A detailed [guide on electronic artwork](#) is available.

You are urged to visit this site; some excerpts from the detailed information are given here.

Formats

Regardless of the application used, when your electronic artwork is finalized, please 'save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

EPS (or PDF): Vector drawings. Embed the font or save the text as 'graphics'.

TIFF (or JPG): Color or grayscale photographs (halftones): always use a minimum of 300 dpi.

TIFF (or JPG): Bitmapped line drawings: use a minimum of 1000 dpi.

TIFF (or JPG): Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.

Please do not:

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
- Supply files that are too low in resolution.
- Submit graphics that are disproportionately large for the content.

Color artwork

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Figure captions

Ensure that each illustration has a caption. A caption should comprise a brief title (**not** on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

Tables

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

References

Citation in text

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

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As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

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Examples: 'as demonstrated (Allan, 2000a, 2000b, 1999; Allan and Jones, 1999)... Or, as demonstrated (Jones, 1999; Allan, 2000)... Kramer et al. (2010) have recently shown ...'

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Van der Geer, J., Hanraads, J.A.J., Lupton, R.A., 2010. The art of writing a scientific article. *J. Sci. Commun.* 163, 51–59. <https://doi.org/10.1016/j.Sc.2010.00372>.

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Van der Geer, J., Hanraads, J.A.J., Lupton, R.A., 2018. The art of writing a scientific article. *Heliyon.* 19, e00205. <https://doi.org/10.1016/j.heliyon.2018.e00205>.

Reference to a book:

Strunk Jr, W., White, E.B., 2000. *The Elements of Style*, fourth ed. Longman, New York.

Reference to a chapter in an edited book:

Mettam, G.R., Adams, L.B., 2009. How to prepare an electronic version of your article, in: Jones, B.S., Smith, R.Z. (Eds.), *Introduction to the Electronic Age*. E-Publishing Inc., New York, pp. 281–304.

Reference to a website:

Cancer Research UK, 1975. Cancer statistics reports for the UK. <http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/> (accessed 13 March 2003).

Reference to a dataset:

[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T., 2015. Mortality data for Japanese oak wilt disease and surrounding forest compositions. Mendeley Data, v1. <https://doi.org/10.17632/xwj98nb39r.1>.

Journal abbreviations source

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