DESCRIPTION

Reports of Practical Oncology and Radiotherapy is a bimonthly interdisciplinary journal that publishes original contributions in clinical and radiation oncology as well as in radiotherapy physics, techniques, and equipment.

The journal welcomes original research papers, review articles, preliminary communications, technical notes, and novel case reports, as well as letters to the editor on recent RPOR articles or controversial issues in the field.

Reports of Practical Oncology and Radiotherapy is the official journal of the following scientific societies and institutions: Czech Society of Radiation Oncology, Biology and Physics; Catalan Occitan Oncology Group; Guild of Bulgarian Radiotherapists; Hungarian Society for Radiation Oncology; Latin American Association for Radiation Oncology; Polish Society of Radiation Oncology; Polish Study Group of Head and Neck Cancer; Portuguese Society of Radiotherapy Oncology; Romanian Society of Radiotherapy and Medical Oncology; Slovenian Society for Radiation Oncology; Spanish Society of Radiation Oncology; Mexican Society of Radiooncology and the Greater Poland Cancer Centre.

The journal serves researchers and practitioners in the fields of clinical oncology, radiation oncology and medical physics, providing an international platform to exchange practical, multidisciplinary clinical and scientific knowledge and achievements in oncology and related disciplines. The journal recognises the increasing need for effective interdisciplinary collaboration in the fight against cancer.

Articles published in the journal in recent years cover diverse issues in oncology and medical physics, particularly radiotherapy treatment planning, clinical dosimetry, treatments based on non-ionizing radiation, and cancer diagnostics.

ABSTRACTING AND INDEXING

Embase
Elsevier BIOBASE
Index Copernicus
Scopus
Emerging Sources Citation Index (ESCI)
EDITORIAL BOARD

Editor-in-Chief
Julian Malicki, The Greater Poland Cancer Centre, 15 Garbary Street, 61-688, Poznań, Poland

Clinical
Marcela de la Torre, Universidad de Buenos Aires, Buenos Aires, Argentina
Tatiana Hadjieva, Dept. of Radiotherapy, University Hospital St. Sofia, Sofia, Bulgaria
Marco Krenghi, Azienda Ospedaliero Universitaria, Novara, Italy
Jin-yi Lang, Sichuan Cancer Hospital and Research Institute, China
Hugo Raúl Marsiglia, Instituto Oncológico, Fundación Arturo López Pérez, Santiago, Chile
Carmen Llacer Moscardo, Institut du Cancer de Montpellier (ICM), Montpellier, France
Jirí Petera, Medical Faculty Hospital, Hradec Králové New, Czech Republic
Adela Poitevin, Dept. of radiation and oncology, Médica Sur, Tlalpan, Mexico
Primož Strojan, Dept. of Teleradiotherapy, Institute of Oncology Ljubljana, Ljubljana, Slovenia

Biology
Boguslaw Maciejewski, Cancer Centre and Institute of Oncology, Maria Sklodowska-Curie Memorial Institute, Gliwice, Poland
Michał Masternak, College of Medicine, University of Central Florida, Orlando, Florida, USA

Brachytherapy
Ovidiu Florin Coza, Dept. of Oncologic Radiotherapy, Institute of Oncology in Cluj-Napoca, Cluj-Napoca, Romania
Maria De Lurdes Trigo, Serviço de Braquiterapia, Instituto Portuêês Oncologia Porto FG, EPE, Porto, Portugal
Ferran Guedea, Dept. of Radiation Oncology, L'Hospitalet de Llobregat, Barcelona, Spain
Csaba Polgár, Dept. of Radiotherapy, National Institute of Oncology, Budapest, Hungary

Physics
Julian Malicki, The Greater Poland Cancer Centre, Poznań, Poland

Surgical Oncology
Wojciech Golusinski, Dept. of Surgical Oncology, The Greater Poland Cancer Centre, Poznan, Poland

Medical Consultant
Piotr Milecki, Dept. of Radiation Oncology & Radiotherapy, The Greater Poland Cancer Centre, Poznan, Poland
Anna Rucińska, The Greater Poland Cancer Centre, Poznań, Poland

Statistical Editor
Michał Michalak, Poznan University of Medical Sciences, Poznań, Poland

Administrative Assistant
Sylwia Ciesińska, Dept. of Radiation Oncology & Radiotherapy, The Greater Poland Cancer Centre, Poznan, Poland

Language Editor
Bradley Londres, Hospital Duran i Reynals, Catalan Institute of Oncology, Barcelona, Spain

Editorial Board
Beatriz Amendola, Innovative Cancer Institute, South Miami, Florida, USA
Dimos Baltas, Division of Medical Physics, Department of Radiation Oncology, University of Freiburg, Freiburg, Germany
Harry Bartelink, Dept. of Radiotherapy, The Netherlands Cancer Institute, Amsterdam, Netherlands
Albert Biete, Dept. of Radiation and Oncology, University of Barcelona (Hospital Clinic), Barcelona, Spain
Victor Bourel, Universidad Favaloro, Buenos Aires, Argentina
Ruud Brakenhoff, Dept. of Otolaryngology/Head&Neck Surgery, Vrije University Medical Centre (VUMC), Amsterdam, Netherlands
Bozidar Casar, Institute of Oncology Ljubljana, Ljubljana, Slovenia
Antoni Castel, USP Instituto Universitario Dexeus, Barcelona, Spain
Maja Čemažar, Dept. of Health Sciences, University of Primorska, Isola, Slovenia
Laura Cerezo Padellano, Dept. of Medicine, Hospital Universitario La Princesa, Madrid, Spain
Joanna.E Cygler, Ottawa Hospital Regional Cancer Centre, Ottawa, Ontario, Canada
Andreas Dietz, Dept. of Ear, Nose and Throat Medicine/Plastic Surgery, University of Leipzig, Leipzig, Germany
Maria do Carmo Lopes, Dept. of Medical Physics, Portuguese Oncology Institute, Coimbra, Portugal
Peter Dunscombe, Schulich School of Engineering, University of Calgary, Calgary, Alberta, Canada
David Feltl, University Hospital Ostrava, Ostrava, Czech Republic
Jacek Fijuth, Dept. of Radiation Therapy and Oncology, Medical University of Lodz, Lodz, Poland
Luis E. Fong de los Santos, Dept. of Radiation Oncology, Mayo Clinic, Rochester, Minnesota, USA
Roumen Gabrovski, County Dispensary for Oncological Diseases with Stationary - Shumen Plto, Shumen, Bulgaria
Anna Gasińska, Dept. of Radiation Biology, Cancer Center and Institute of Oncology, Kraków, Poland
Alfonso Gomez-Iturriaga, Department of Radiation Oncology, Cruces University Hospital, Bizkaia, Spain
Reidar Grenmar, Dept. of Otorhinolaryngology-Head and Neck Surgery, Turku University Hospital, Turku, Finland
Ákos Gulybán, Dept. of Oncotherapy, European Organisation for Research and Treatment of Cancer (EORTC), Brussels, Belgium
Ascension Hervas, Oncología Radioterápica, Hospital Ramon Cajal, Madrid, Spain
Jacek Jassem, Dept. of radiation and oncology, Uniwersyteckie Centrum Kliniczne, Gdańsk, Poland
Barbara Jereczek-Fossa, Dept. of Radiation and oncology, Istituto Europeo di Oncologia (IEO), Milano, Italy
Gabriel Kacso, Dept. of Oncology and Radiotherapy, Prof. Dr. Ion Chiricuță Oncological Institute, Cluj-Napoca, Romania
Joanna Kaźmierska, Dept. of Radiation Oncology & Radiotherapy, The Greater Poland Cancer Centre, Poznan, Poland
Adam Konefal, Department of Nuclear Physics and its Applications, Institute of Physics, University of Silesia, Katowice, Poland
György Kovác, University of Lubeck, Lübeck, Germany
Sunil Krishnan, Dept. of Radiation Oncology, The University of Texas MD Anderson Cancer Center, Houston, Texas, USA
Paweł Kukłowicz, Maria Skłodowska-Curie Institute of Oncology, Warszawa, Poland
Pedro C. Lara, Dept. of Radiation Oncology, Hospital Universitario de Gran Canaria, Las Palmas de Gran Canaria, Spain
C René Leemans, Dept. of ENT- Head and Neck Surgery, Vrije University Medical Centre (VUMC), Amsterdam, Netherlands
Carla Lopes De Castro, Dept. of Medical Physics, Portuguese Oncology Institute, Coimbra, Portugal
José Luis López Guerra, Virgen del Rocio University Hospital, Sevilla, Spain
José López Torrecilla, Servicio Oncología Radioterápica-ERESA, Hospital General Universitario, Valencia, Spain
Miquel Macia, Institut Català d'Oncologia, IDIBELL, CIBERESP
Andrzej Mackiewicz, Dept. of Cancer Immunology, The Greater Poland Cancer Centre, Poznan, Poland
Tibor Major, Dept. of Radiotherapy, National Institute of Oncology, Budapest, Hungary
Janina Markowska, Dept. of Oncology, Poznan University of Medical Sciences, Poznań, Poland
Andrzej Marszalek, Dept. of Tumor Pathology, Poznan University of Medical Sciences, Poznań, Poland
Michał Michalak, Poznan University of Medical Sciences, Poznań, Poland
Piotr Milecki, Dept. of Radiation Oncology & Radiotherapy, The Greater Poland Cancer Centre, Poznan, Poland
Luis Angel Montero, Dept. of Radiation Oncology, Hospital Universitario Ramón y Cajal, Madrid, Spain
Paweł Murawa, Dept. of Surgical Oncology, The Greater Poland Cancer Centre, Poznan, Poland
Viorica Magdalena Nagy, Dept. of Radiation Oncology, Iuliu Hațieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania
Arturo Navarro, L'Hospitalet de Llobregat, Barcelona, Spain
Irena Oliak, Institute of Oncology Ljubljana, Slovenia
Jan Olofsson, Dept. of Otolaryngology, Haukeland University Hospital, Bergen, Norway
Luis A. Perez Romasanta, Dept. of Medical Oncology, Hospital Clínico Universitario de Salamanca, Salamanca, Spain
Primož Peterl, Dept. of Medical Physics, Institute of Oncology Ljubljana, Ljubljana, Slovenia
Tomasz Piotrowski, Poznan University of Medical Sciences, Poznań, Poland
Ervin B Podgorsak, Dept. of Radiation Oncology, Montreal General Hospital, Montreal, Quebec, Canada
Maria Esmeralda Poli, Hospital de Santa Maria, Lisboa, Portugal
Philipp Poortmans, Dept. of Radiation Oncology, Verbeeten Institute, Tilburg, Netherlands
Richard Pötter, Dept. of Radiotherapy and Radiobiology, Medical University of Vienna, Vienna, Austria
Andrzej Roszk, The Greater Poland Cancer Centre, Poznan, Poland
Angela Rovirosa, Dept. of Radiation and Oncology, University of Barcelona (Hospital Clinic), Barcelona, Spain
Maria del Carmen Rubio Rodríguez, Hospital Universitario Sanchinarro, Madrid, Spain
Francisco Sanchez-Doblado, Fac. de Medicina, University of Seville, Seville, Spain
Beata Sas-Korczyńska, Dept. of tumor Biology, Cancer Center and Institute of Oncology, Kraków, Poland
Pierre Scalliet, Dept. of Radiation Oncology, University Hospital St Luc, Brussels, Belgium
Krzysztof Składowski, Cancer Center and Institute of Oncology, Kraków, Poland
Jan Skołyszewski, Cancer Center and Institute of Oncology, Kraków, Poland
Renata Soumarova, Comprehensive Cancer Centre of Hospital Novy Jicin, JSC, Novy Jicin, Czech Republic
Vratislav Strnad, Dept. of Radiation Oncology, University Hospital Erlangen, Erlangen, Germany
Zoltán Takácsí-Nagy, Department of Radiotherapy, National Institute of Oncology, Budapest, Hungary
Rafal Tarnawski, Dept. of Radiotherapy, Maria Skłodowska-Curie Memorial Cancer Centre and Institute of Oncology, Gliwice, Poland
Uulke van der Heide, Department of Radiotherapy, The Netherlands Cancer Institute, Amsterdam, Netherlands
Vanaja Velenik, Dept. of Radiotherapy, Institute of Oncology Ljubljana, Ljubljana, Slovenia
Milan Vošmik, University Hospital Hradec Králové, Czech Republic
Jacek Wachowiak, Dept. of Pediatric Hematology, Oncology and Transplantology, University of Medical Sciences, Poznan, Poland
Michał Waligórski, Dept. of medical physics, Cancer Center and Institute of Oncology, Kraków, Poland
GUIDE FOR AUTHORS

INTRODUCTION

Criteria for manuscripts
The Editorial Board of Reports of Practical Oncology and Radiotherapy takes under consideration for publication original articles with the understanding that neither the manuscript nor any part of its essential substance, tables or figures have been published previously in print form or electronically and are not under consideration by any other publication or electronic medium. This restriction does not apply to abstracts or press reports published in connection with scientific meetings. Copies of any closely related manuscripts should be submitted to the Editor along with the manuscript that is to be considered by RPOR.

RPOR discourages the submission of more than one article dealing with related aspects of the same study.

Each submission packet should include the statement signed by the first author that the work has not been published previously or submitted elsewhere for review and a copyright transfer.

Categories of articles
Accepted papers are published in the following journal sections: research papers (not more than 10 pages) review articles (not more than 8 pages) technical notes (not more than 2 pages) letters to the Editor for comments on recent articles (not more than 1 page) case reports (not more than 8 pages)

BEFORE YOU BEGIN

Ethics in publishing
Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication.

Studies in humans and animals
If the work involves the use of human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans. The manuscript should be in line with the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals and aim for the inclusion of representative human populations (sex, age and ethnicity) as per those recommendations. The terms sex and gender should be used correctly.

Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.

All animal experiments should comply with the ARRIVE guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, EU Directive 2010/63/EU for animal experiments, or the National Institutes of Health guide for the care and use of Laboratory animals (NIH Publications No. 8023, revised 1978) and the authors should clearly indicate in the manuscript that such guidelines have been followed. The sex of animals must be indicated, and where appropriate, the influence (or association) of sex on the results of the study.

Declaration of interest
All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential competing interests include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors must disclose any interests in two places: 1. A summary declaration of interest statement in the title page file (if double-blind) or the manuscript file (if single-blind). If there are no interests to declare then please state this: 'Declarations of interest: none'. This summary statement will be ultimately published if the article is accepted. 2. Detailed disclosures as part of a separate Declaration of Interest form, which forms part of the journal's official records. It is important for potential interests to be declared in both places and that the information matches. More information.

Submission declaration and verification
Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in
English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service Crossref Similarity Check.

**Use of inclusive language**
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').

**Contributors**
Each author is required to declare his or her individual contribution to the article: all authors must have materially participated in the research and/or article preparation, so roles for all authors should be described. The statement that all authors have approved the final article should be true and included in the disclosure.

**Changes to authorship**
Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed.

Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

**Clinical trial results**
In line with the position of the International Committee of Medical Journal Editors, the journal will not consider results posted in the same clinical trials registry in which primary registration resides to be prior publication if the results posted are presented in the form of a brief structured (less than 500 words) abstract or table. However, divulging results in other circumstances (e.g., investors' meetings) is discouraged and may jeopardise consideration of the manuscript. Authors should fully disclose all posting in registries of results of the same or closely related work.

**Reporting clinical trials**
Randomized controlled trials should be presented according to the CONSORT guidelines. At manuscript submission, authors must provide the CONSORT checklist accompanied by a flow diagram that illustrates the progress of patients through the trial, including recruitment, enrollment, randomization, withdrawal and completion, and a detailed description of the randomization procedure. The CONSORT checklist and template flow diagram are available online.

**Registration of clinical trials**
Registration in a public trials registry is a condition for publication of clinical trials in this journal in accordance with International Committee of Medical Journal Editors recommendations. Trials must register at or before the onset of patient enrolment. The clinical trial registration number should be included at the end of the abstract of the article. A clinical trial is defined as any research study that prospectively assigns human participants or groups of humans to one or more health-related interventions to evaluate the effects of health outcomes. Health-related interventions include any intervention used to modify a biomedical or health-related outcome (for example drugs, surgical procedures, devices, behavioural treatments, dietary interventions, and process-of-care changes). Health outcomes include any biomedical or health-related measures obtained in patients or participants, including pharmacokinetic measures and adverse events. Purely observational studies (those in which the assignment of the medical intervention is not at the discretion of the investigator) will not require registration.
Copyright
Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (more information). Permitted third party reuse of gold open access articles is determined by the author's choice of user license.

Author rights
As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Elsevier supports responsible sharing
Find out how you can share your research published in Elsevier journals.

Role of the funding source
You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

Funding body agreements and policies
Elsevier has established a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some funding bodies will reimburse the author for the gold open access publication fee. Details of existing agreements are available online.

Green open access
Authors can share their research in a variety of different ways and Elsevier has a number of green open access options available. We recommend authors see our open access page for further information. Authors can also self-archive their manuscripts immediately and enable public access from their institution's repository after an embargo period. This is the version that has been accepted for publication and which typically includes author-incorporated changes suggested during submission, peer review and in editor-author communications. Embargo period: For subscription articles, an appropriate amount of time is needed for journals to deliver value to subscribing customers before an article becomes freely available to the public. This is the embargo period and it begins from the date the article is formally published online in its final and fully citable form. Find out more.

This journal has an embargo period of 12 months.

Language (usage and editing services)
Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop.

Informed consent and patient details
Studies on patients or volunteers require ethics committee approval and informed consent, which should be documented in the paper. Appropriate consents, permissions and releases must be obtained where an author wishes to include case details or other personal information or images of patients and any other individuals in an Elsevier publication. Written consents must be retained by the author but copies should not be provided to the journal. Only if specifically requested by the journal in exceptional circumstances (for example if a legal issue arises) the author must provide copies of the consents or evidence that such consents have been obtained. For more information, please review the Elsevier Policy on the Use of Images or Personal Information of Patients or other Individuals. Unless...
you have written permission from the patient (or, where applicable, the next of kin), the personal details of any patient included in any part of the article and in any supplementary materials (including all illustrations and videos) must be removed before submission.

**Submission**

Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

*Submit your article*

Please submit your article via [https://ees.elsevier.com/rpor](https://ees.elsevier.com/rpor).

**Review process**

Manuscripts are evaluated on the basis that they present new insights to the investigated topic, are likely to contribute to a research progress or change in clinical practice or in thinking about a disease. It is understood that all authors listed on a manuscript have agreed to its submission. The signature of the corresponding author on the letter of submission signifies that these conditions have been fulfilled. Received manuscripts are first examined by the *RPOR* editors. Manuscripts with insufficient priority for publication are rejected promptly. Incomplete packages or manuscripts not prepared in the advised style will be sent back to authors without scientific review. The authors are notified with the reference number upon manuscript registration at the Editorial Office. The registered manuscripts are sent to independent experts for scientific evaluation. We encourage authors to suggest the names of possible reviewers, but we reserve the right of final selection. The evaluation process usually takes 1-3 weeks. Submitted papers are accepted for publication after a positive opinion of the independent reviewers.

**Permissions**

Materials taken from other sources must be accompanied by a written statement from both author and publisher giving permission to *RPOR* for reproduction. Obtain permission in writing from at least one author of papers still in press, unpublished data, and personal communications.

**Disclaimer**

Every effort is made by the Editor-in-Chief and the Editorial Board of *RPOR* to see that no inaccurate or misleading data, opinion or statement appear in the *Reports of Practical Oncology and Radiotherapy*. However, they wish to make it clear that the data and opinions appearing in the articles and advertisements herein are the responsibility of the contributor, sponsor or advertiser concerned. Accordingly, the Editor-in-Chief and the Editorial Board accept no liability whatsoever for the consequences of any such inaccurate or misleading data, opinion or statement. Every effort is made to ensure that drug doses and other quantities are presented accurately. Nevertheless, readers are advised that methods and techniques involving drug usage and other treatments described in *RPOR*, should only be followed in conjunction with the drug or treatment manufacturer's own published literature in the readers own country.

**PREPARATION**

**Peer review**

This journal operates a double blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. [More information on types of peer review.]

**Double-blind review**

This journal uses double-blind review, which means the identities of the authors are concealed from the reviewers, and vice versa. [More information] is available on our website. To facilitate this, please include the following separately:

*Title page (with author details)*: This should include the title, authors' names, affiliations, acknowledgements and any Declaration of Interest statement, and a complete address for the corresponding author including an e-mail address.

*Blinded manuscript (no author details)*: The main body of the paper (including the references, figures, tables and any acknowledgements) should not include any identifying information, such as the authors' names or affiliations.
Use of word processing software
It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.
To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

Article structure
Subdivision - unnumbered sections
Divide your article into clearly defined sections. Each subsection is given a brief heading. Each heading should appear on its own separate line. Subsections should be used as much as possible when cross-referencing text: refer to the subsection by heading as opposed to simply 'the text'.

Introduction
State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Material and methods
Provide sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized, and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

Results
Results should be clear and concise.

Discussion
This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

Conclusions
The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Appendices
All files named appendix or marked as such will NOT be published in the journal as they are treated as additional materials and will be available only in the online version of the article.
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Essential title page information
• **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
• **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. You can add your name between parentheses in your own script behind the English transliteration. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lowercase superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
• **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. This responsibility includes answering any future queries about Methodology and Materials. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**
• **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

**Acknowledgements**
Collate acknowledgements in a separate section and include it on the title page only. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

**Abstract**
A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Abstract should be included in the Blinded Manuscript. Abstracts for **Original Articles** should be structured, not exceed 250 words and should consist of five paragraphs labeled: Aim, Background, Materials and Methods, Results, Conclusion. Each section should begin on a new line and briefly describe, respectively, the purpose of the study, how the investigation was performed, the most important results and the principal conclusion that authors draw from the results.

**Keywords**
Immediately after the abstract, provide a maximum of 5 keywords avoiding general and plural terms and multiple concepts (avoid, for example, "and", "of"). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

**Abbreviations**
Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

**Math formulae**
Please submit math equations as editable text and not as images. Present simple formulae in line with normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

**Footnotes**
Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

**Artwork**
**Electronic artwork**
**General points**
- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.
- Submit each illustration as a separate file.

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**
If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.
Regardless of the application used other than Microsoft Office, 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 all used fonts.
TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.
TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.

Please do not:
• Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
• Supply files that are too low in resolution;
• Submit graphics that are disproportionately large for the content.

Color artwork
Please make sure that artwork files are in an acceptable format (TIFF, EPS or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color on the Web (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. Please indicate your preference for color: in print or on the Web only. For further information on the preparation of electronic artwork, please see https://www.elsevier.com/artworkinstructions.

Figure captions
Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. 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.

Web references
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.

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

References in a special issue
Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.
Reference management software

Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley. Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal’s style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software.

Other software that can be used for reference management: RefWorks (http://www.refworks.com), BibTeX (http://www.bibtex.org), ProCite (http://www.procite.com).

Reference style

Text: Indicate references by superscript numbers in the text. The actual authors can be referred to, but the reference number(s) must always be given.

List: Number the references in the list in the order in which they appear in the text.

Examples:

Reference to a journal publication:

Reference to a journal publication with an article number:

Reference to a book:

Reference to a chapter in an edited book:

Reference to a website:

Reference to a dataset:

Note shortened form for last page number. e.g., 51–9, and that for more than 6 authors the first 6 should be listed followed by 'et al.' For further details you are referred to 'Uniform Requirements for Manuscripts submitted to Biomedical Journals' (J Am Med Assoc 1997;277:927–34)(see also Samples of Formatted References).

Journal abbreviations source

Journal names should be abbreviated according to the List of Title Word Abbreviations.

Video

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file’s content. In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.
Data visualization
Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.

Supplementary material
Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

Research data
This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

Data linking
If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

Mendeley Data
This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the Mendeley Data for journals page.

Data statement
To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

Submission checklist
The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.
Ensure that the following items are present:
One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address
• Phone numbers
All necessary files have been uploaded, and contain:
• Keywords
• All figure captions
• All tables (including title, description, footnotes)
Further considerations
• Manuscript has been 'spell-checked' and 'grammar-checked'
• References are in the correct format for this journal
• All references mentioned in the Reference list are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Web)
For any further information please visit our customer support site at http://service.elsevier.com.

AFTER ACCEPTANCE

Online proof correction
Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.
If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.
We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

Offprints
The corresponding author will, at no cost, receive a customized Share Link providing 50 days free access to the final published version of the article on ScienceDirect. The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's Webshop. Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

AUTHOR INQUIRIES
Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.
You can also check the status of your submitted article or find out when your accepted article will be published.