INTRODUCTION TO BIOLOGICAL CAUSES

International Biodeterioration and Biodegradation publishes original research papers and reviews on the biological causes of deterioration or degradation.

- The causes may be macro- or microbiological, whose origins may be aerial, aquatic, or terrestrial.
- The effects may include corrosion, fouling, rotting, decay, infection, disfigurement, toxification, weakening or processes that liquefy, detoxify, or mineralize.
- The materials affected may include natural, synthetic or refined materials [such as metals, hydrocarbons and oils, foodstuffs and beverages, pharmaceuticals, cellulose and wood, plastics and polymers, fibres, paper, leather, waste materials or any other material of commercial importance]; and structures or systems [such as buildings, works of art, processing equipment, etc.] as well as hazardous wastes, and includes environmental and occupational health aspects resulting from the activities of the biological agents described above.

Papers on all aspects of cause, mode of action, treatment, protection and prevention, analysis and testing, detoxification, upgrading, commercial implications, biocides and substitutes and related areas are welcome. However, papers that are strictly related to engineering aspects of biotechnological processes and those that aim at developing or assessing mathematical-based predictive models used in the designing of biotechnological processes are excluded.

International Biodeterioration and Biodegradation is the Official Journal of the International Biodeterioration and Biodegradation Society. For more information visit the International Biodeterioration and Biodegradation Society website.

AUDIENCE

Materials scientists, applied and industrial microbiologists, microbiologists, food scientists.

IMPACT FACTOR

2018: 3.824 © Clarivate Analytics Journal Citation Reports 2019
ABSTRACTING AND INDEXING

PubMed/Medline
Art & Archaeology Technical Abstracts
Biodeterioration Abstracts
Embase
Metals Abstracts
Forest Products Abstracts
AGRICOLA
Microbiology Abstracts
Biotechnology Research Abstracts
World Textile Abstracts
Nutrition Abstracts
Current Contents - Agriculture, Biology & Environmental Sciences
Biology and Environmental Sciences
Environmental Periodicals Bibliography
Paper & Board Abstracts
Web of Science
Marine Biotechnology Abstracts
Cambridge Scientific Abstracts
Scopus
Elsevier BIBOBASE
Science Citation Index Expanded

EDITORIAL BOARD

Editor-in-Chief
J-D. Gu, University of Hong Kong, Pokfulam, Hong Kong

Honorary Editor-in-Chief
R.J. Koestler, Museum Conservation Institute, Suitland, Maryland, United States

Editors
P.A. Geis, Geis Microbial Quality, Advanced Testing Lab., The Villages, Florida, United States
J. Jiang, Nanjing Agricultural University, Nanjing, China
R. Schneider, University of Sao Paulo, São Paulo, Brazil
J. Sufiifa, University of Oklahoma, Norman, Oklahoma, United States
M. Sylvestre, INRS-Institut Armand-Frappier, Laval, Quebec, Canada
C. Urzi, University of Messina, Messina, Italy
X. Zhan, National University of Ireland Galway, Galway, Ireland

Editorial Board
V. Achal, Guangdong Technion-Israel Institute of Technology Department of Environmental Engineering, Shantou, China
D. Allsopp, Westbrook, Northampton, United Kingdom
M.J. Amoroso, Test Plant for Industrial Microbiological Processes, San Miguel de Tucuman, Argentina
R.A. Blanchette, University of Minnesota Department of Plant Pathology, St. Paul, Minnesota, United States
R. Boopathy, Nicholls State University Department of Biological Sciences, Thibodaux, Louisiana, United States
P. DePriest, Museum Conservation Institute, Suitland, Maryland, United States
K. Demnerova, University of Chemistry and Technology Prague, Praha, Czech Republic
P. Di Martino, University of Cergy-Pontoise, University Institute of Technology, Federation Institute of Materials, Laboratory ERRMECE, Cergy-Pontoise, France
C. Gaylarde, University of Oklahoma, Norman, Oklahoma, United States
X. Han, Tianjin University, Tianjin, China
Y. Hong, South China Sea Institute of Oceanology Chinese Academy of Sciences, Guangzhou, China
G. Howard, Southeastern Louisiana University, Hammond, Louisiana, United States
M. Humar, University of Ljubljana, Ljubljana, Slovenia
Y. Jin, Purdue University, West Lafayette, Indiana, United States
N. Kartal, Istanbul University-Cerrahpasa Faculty of Forestry, Istanbul, Turkey
P. Li, China University of Geosciences, Wuhan, China
B. Little, US Naval Research Laboratory, Washington, District of Columbia, United States
R. Margesin, University of Innsbruck, Innsbruck, Austria
D.A. Moreno, Polytechnic University of Madrid, Madrid, Spain
L.H.G. Morton, University of Central Lancashire, Preston, United Kingdom
B.-Z. Mu, East China University of Science and Technology, Shanghai, China
F.J. Passman, Biodeterioration Control Associates Inc, Princeton, New Jersey, United States
F. Pinzari, Research Centre for Agriculture and Environment, Rome, Italy
F. Pohleven, University of Ljubljana, Ljubljana, Slovenia
O. Ruiz, Air Force Research Laboratory, Wright Patterson AFB, Ohio, United States
W. Sand, University of Duisburg-Essen Faculty of Chemistry, Essen, Germany
K.T. Smith, USDA Forest Service Northeastern Area State and Private Forestry, Milwaukee, Wisconsin, United States
M. Sondossi, Weber State University, Ogden, Utah, United States
A. Spagni, ENEA Bologna Research Centre, Bologna, Italy
K. Sterflinger, University of Natural Resources and Life Sciences Vienna, Wien, Austria
F. Villa, University of Milan Department of Food Environmental and Nutritional Sciences, Milano, Italy
T. Warscheid, LBW-Bioconsult Dr Thomas Warscheid Building Protection, Wiefelstede, Germany
G. Wu, Tsinghua University Graduate School at Shenzhen, Shenzhen, China
S. Xie, Peking University, Beijing, China
D. Xu, Northeastern University, Shenyang National Laboratory for Materials Science, Shenyang, China
R. Zhang, Nanjing Agricultural University, Nanjing, China
M. Zinn, HES-SO Valais Wallis School of Engineering Life Technologies, Sion, Switzerland
GUIDE FOR AUTHORS

INTRODUCTION
Aims and Scope

*International Biodeterioration & Biodegradation* publishes original research papers and reviews on the biological causes of deterioration or degradation.

- The causes may be macro- or microbiological, whose origins may be aerial, aquatic, or terrestrial.
- The effects may include corrosion, fouling, rotting, decay, infection, disfigurement, toxification, weakening or processes that liquefy, detoxify, or mineralize.
- The materials affected may include natural, synthetic or refined materials [such as metals, hydrocarbons and oils, foodstuffs and beverages, pharmaceuticals, cellulose and wood, plastics and polymers, fibres, paper, leather, waste materials or any other material of commercial importance]; and structures or systems [such as buildings, works of art, processing equipment, etc.] as well as hazardous wastes, and includes environmental and occupational health aspects resulting from the activities of the biological agents described above.

Papers on all aspects of cause, mode of action, treatment, protection and prevention, analysis and testing, detoxification, upgrading, commercial implications, biocides and substitutes and related areas are welcome. However, papers that are strictly related to engineering aspects of biotechnological processes and those that aim at developing or assessing mathematical-based predictive models used in the designing of biotechnological processes are excluded.

*International Biodeterioration & Biodegradation is the Official Journal of the International Biodeterioration and Biodegradation Society.*

**Types of paper**
Contributions may be original papers, review articles, case studies, short communications, reports of conferences or meetings, book reviews, or news of forthcoming meetings. The subject and content of review articles should be discussed with the Editors prior to submission to the journal.

Please note that papers with a routine nature and lacking originality, novelty, and uniqueness will not be accepted for publication.

In general, the manuscript should not exceed 10 000 words, or about 20 printed pages.

**Submission checklist**
You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

**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

All necessary files have been uploaded:

*Manuscript:*
- Include keywords
- All figures (include relevant captions)
- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print

*Graphical Abstracts / Highlights files* (where applicable)

*Supplemental files* (where applicable)

Further considerations
- Manuscript has been 'spell checked' and 'grammar checked'
• 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 Internet)
• A competing interests statement is provided, even if the authors have no competing interests to declare
• Journal policies detailed in this guide have been reviewed
• Referee suggestions and contact details provided, based on journal requirements

For further information, visit our Support Center.

BEFORE YOU BEGIN

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

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 conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors should complete the declaration of interest statement using this template and upload to the submission system at the Attach/Upload Files step. If there are no interests to declare, please choose: ‘Declarations of interest: none’ in the template. This statement will be published within the article if accepted. 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.

Preprints
Please note that preprints can be shared anywhere at any time, in line with Elsevier’s sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see ‘Multiple, redundant or concurrent publication’ for more information).

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’).

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.
Article transfer service
This journal is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable in one of our other participating journals, then you may be asked to consider transferring the article to one of those. If you agree, your article will be transferred automatically on your behalf with no need to reformat. Please note that your article will be reviewed again by the new journal. More information.

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.

Open access
This journal offers authors a choice in publishing their research:

Subscription
- Articles are made available to subscribers as well as developing countries and patient groups through our universal access programs.
- No open access publication fee payable by authors.
- The Author is entitled to post the accepted manuscript in their institution's repository and make this public after an embargo period (known as green Open Access). The published journal article cannot be shared publicly, for example on ResearchGate or Academia.edu, to ensure the sustainability of peer-reviewed research in journal publications. The embargo period for this journal can be found below.

Gold open access
- Articles are freely available to both subscribers and the wider public with permitted reuse.
- A gold open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.

Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards.
For gold open access articles, permitted third party (re)use is defined by the following Creative Commons user licenses:

**Creative Commons Attribution (CC BY)**
Lets others distribute and copy the article, create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), include in a collective work (such as an anthology), text or data mine the article, even for commercial purposes, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, and do not modify the article in such a way as to damage the author's honor or reputation.

**Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)**
For non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

The gold open access publication fee for this journal is **USD 2500**, excluding taxes. Learn more about Elsevier's pricing policy: [https://www.elsevier.com/openaccesspricing](https://www.elsevier.com/openaccesspricing).

**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](https://www.elsevier.com/openaccess) 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.](https://www.elsevier.com/openaccess)

This journal has an embargo period of 24 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](https://www.elsevier.com/author-services/author-support/author-editing-services) available from Elsevier's Author Services.

**Submission**
Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts source files to a single PDF file of the article, which is used in the peer-review process. Please note that even though manuscript source files are converted to PDF files at submission for the review process, these source files are needed for further processing after acceptance. All correspondence, including notification of the Editor’s decision and requests for revision, takes place by e-mail removing the need for a paper trail.

The online submission system for *International Biodeterioration and Biodegradation* can be accessed at [http://ees.elsevier.com/ibb](http://ees.elsevier.com/ibb).

**PREPARATION**

**Cover Letter**
Please affirm in your cover letter:
1) that this paper has not been published before in any form;
2) that it is not under consideration by another journal at the same time as IBB;
3) and that all authors approve of its submission to IBB

**In General**
The manuscript should be prepared on a word-processor, in single-spaced typing on pages of uniform size with a 2.5cm margin all round. Artificial (hyphenated) word breaks should not be used at the end of lines. Footnotes to the text should be avoided. All pages should be numbered consecutively. To facilitate the review process continuous line numbers should be inserted in the text of the manuscript.
References
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct.

Peer review
This journal operates a single 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 one independent expert reviewer 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.

Article structure
Subdivision - numbered sections
Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, …), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

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 section should interpret and discuss the results in the light of previous work; it should not repeat at length material presented in the Introduction or Results. In Short Communications, the Results and Discussion sections may be combined.

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
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 lower-case 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.

Highlights
Highlights are mandatory for this journal as they help increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: example Highlights.

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

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.

The abstract should consist of about 150-200 words.

Graphical abstract
Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view Example Graphical Abstracts on our information site.

Authors can make use of Elsevier's Illustration Services to ensure the best presentation of their images and in accordance with all technical requirements.

Keywords
Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and 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.

Abbreviations of chemical or other names should be defined when first mentioned, unless the abbreviation is commonly used and internationally known and accepted, e.g. ATP, DNA, EDTA, GC-MS, GLC, HPLC, IU (International Unit). For approximately, use approx. or c. (not ca.); for versus, use vs (not v.); for the statistical terms standard deviation, standard error and standard error of the mean, use SD, SE, and SEM without definition.

Units
The SI system should be used for all scientific and laboratory data; if, in certain instances, it is necessary to quote other units, these should be added in parentheses. Temperatures should be given in degrees Celsius. The unit 'billion' (109 in America, 1012 in Europe) is ambiguous and should not be used. Abbreviations for units should follow the suggestions of the British Standards publication BS 1991. The full stop should not be included in scientific abbreviations such as h (not h.), m (not m.), and ppm (not p.p.m.); '%' should be used in preference to 'per cent'; 'per', as in mg per liter, should be written in exponential notation as mg l−1 (not mg/l). Where abbreviations are likely to
cause ambiguity or cannot be readily understood by an international readership, units should be given in full. Greek symbols and unusual symbols used for the first time should be defined by name in the left-hand margin.

**Acknowledgements**

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

**Formatting of funding sources**

List funding sources in this standard way to facilitate compliance to funder's requirements:

**Funding:** This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Nomenclature and units**

Authors should check all chemical, biochemical, and microbiological names before submission of the manuscript. Chemical Abstracts should be consulted for names of chemical compounds; The Merck Index, 13th ed., 2001, is a useful alternative source. For biochemicals, the Compendium of Biochemical Nomenclature and Related Documents, published for The Biochemical Society, London, by Portland Press (1992), should be consulted. Enzymes should be given the (trivial) names in Enzyme Nomenclature (Academic Press, 1992) as recommended by the International Union of Biochemistry and the assigned EC number appended.

Latin binomials should be used for all organisms other than man and farm stock. At first mention in both the Abstract and the main body of the text the full names should be given, as in Mangifera indica, and thereafter abbreviated by using only the initial letter of the generic name, as in M. indica. Where several genera have the same initial letter (and abbreviation of the generic names might cause confusion), the full generic name should be retained. For common generic names in bacteria, the abbreviations standardly used, e.g. Staph., Ser., and Strep. for Staphylococcus, Serratia, and Streptococcus, should be employed. For the correct spelling of bacterial names, authors should consult Bacterial Nomenclature Up to Date [http://www.dsmz.de/bactnom/bactname.htm](http://www.dsmz.de/bactnom/bactname.htm) or List of Bacterial Names with Standing in Nomenclature [http://www.bacterio.cict.fr](http://www.bacterio.cict.fr). For fungal names, the Index Fungorum [http://www.indexfungorum.org/Names/Names.asp](http://www.indexfungorum.org/Names/Names.asp) or Ainsworth and Bisby's Dictionary of the Fungi, 8th edition (Commonwealth Agricultural Bureaux International, Egham, Surrey, 1995) should be consulted.

**Conventions**

All cultures, strains, or varieties on which the work is based must be deposited in a national culture collection, e.g., ASIB, ATCC, CABI, CBS, DSMZ (for an extensive national listing see: [http://wdcm.nig.ac.jp/hpcc.html](http://wdcm.nig.ac.jp/hpcc.html)), from which they can be obtained by others. Newly determined nucleotide, protein sequences and microarray data* /or amino acid sequence data must be deposited and a GenBank/EMBL/ DDBJ accession number(s) must be included in the manuscript no later than the revision stage of the review process. It is expected that the sequence data will be released to the public no later than the publication (online posting) date of the accepted manuscript. If conclusions in a manuscript are based on the analysis of sequences and a GenBank/EMBL/DDBJ accession number is not provided at the time of the review, authors should provide the sequence data as supplemental material. It is expected that, when previously published sequence accession numbers are cited in a manuscript, the original citations (e.g., journal articles) will be included in the References section when possible or reasonable. Analyses should specify the database, and the date of each analysis should be indicated as, e.g., January 2011. If relevant, the version of the software used should be specified.
*Microarray data should be MIAME compliant (for guidelines, see http://www.mged.org/Workgroups/MIAME/miame.html).

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).

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.
• Ensure that color images are accessible to all, including those with impaired color vision.
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 (or JPEG), EPS (or PDF), 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 online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article. Please indicate your preference for color: in print or online only. Further information on the preparation of electronic artwork.

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). References should not be cited in the abstract. It is not recommended that unpublished results and personal communications be included in the reference list, although they 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.

Reference links
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.

A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.

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. This 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.
Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/international-biodeterioration-and-biodegradation

When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference formatting
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

Reference style
There should be a list of references in alphabetical order at the end of the paper, following the Harvard system. All references in this list must be cited in the text, and vice versa. The references should be indicated at the appropriate place in the text using surnames and year of publication, as in Canale-Parola (1992), Eaton and Hale (1993), and for three or more authors Bjordal et al. (2000). Where in a series, references should be in ascending order of year, as in (Daniel and Nilsson 1986; Canale-Parola 1992; Eaton and Hale 1993; Björdal et al. 2000). Where two or more papers by the same author(s) are published in the same year they should be cited as Smith (1995a), Smith (1995b), etc. When together in parentheses they should appear as (Smith 1992a,b). Each reference in the list should give names and initials of ALL authors, and the year and the exact title of the paper or book. For journals there should follow the full title, volume number (but not part number), and initial and final page numbers of the article; for books there should follow the name of the publisher and place of publication. The styles for contributions to edited books and proceedings, reports and online articles are shown below.


Dillon, H.K., Heinsohn, Miller, J.D., (Eds.), 1996. Field guide for the determination of biological contaminants in environmental samples. American Industrial Hygiene Association, Fairfax, VA.


Unpublished data or private communications should not appear in the reference list. References to unpublished data will only be accepted at the discretion of the Editors.
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 in Brief
You have the option of converting any or all parts of your supplementary or additional raw data into one or multiple data articles, a new kind of article that houses and describes your data. Data articles ensure that your data is actively reviewed, curated, formatted, indexed, given a DOI and publicly available to all upon publication. You are encouraged to submit your article for Data in Brief as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to Data in Brief where it will be editorially reviewed and published in the open access data journal, Data in Brief. Please note an open access fee of 600 USD is payable for publication in Data in Brief. Full details can be found on the Data in Brief website. Please use this template to write your Data in Brief.
MethodsX
You have the option of converting relevant protocols and methods into one or multiple MethodsX articles, a new kind of article that describes the details of customized research methods. Many researchers spend a significant amount of time on developing methods to fit their specific needs or setting, but often without getting credit for this part of their work. MethodsX, an open access journal, now publishes this information in order to make it searchable, peer reviewed, citable and reproducible. Authors are encouraged to submit their MethodsX article as an additional item directly alongside the revised version of their manuscript. If your research article is accepted, your methods article will automatically be transferred over to MethodsX where it will be editorially reviewed. Please note an open access fee is payable for publication in MethodsX. Full details can be found on the MethodsX website. Please use this template to prepare your MethodsX article.

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.

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 Author Services. 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.

© Copyright 2018 Elsevier | https://www.elsevier.com