nature nanotechnology

Guide to Authors

About the Journal

Aims and scope of the journal
Nature Nanotechnology is a multidisciplinary journal that publishes papers of the highest quality and significance in all areas of nanoscience and nanotechnology. The journal covers research into the design, characterization and production of structures, devices and systems that involve the manipulation and control of materials and phenomena at atomic, molecular and macromolecular scales. Both bottom-up and top-down approaches - and combinations of the two - are covered.

Nature Nanotechnology also encourages the exchange of ideas between chemists, physicists, material scientists, biomedical researchers, engineers and other researchers who are active at the frontiers of this diverse and multidisciplinary field. Coverage extends from basic research in physics, chemistry and biology, including computational work and simulations, through to the development of new devices and technologies for applications in a wide range of industrial sectors (including information technology, medicine, manufacturing, high-performance materials, and energy and environmental technologies). Organic, inorganic and hybrid materials are all covered.

Research areas covered in the journal include:

- Carbon nanotubes and fullerenes
- Computational nanotechnology
- Electronic properties and devices
- Environmental, health and safety issues
- Molecular machines and motors
- Molecular self-assembly
- Nanobiotechnology
- Nanofluidics
- Nanomagnetism and spintronics
- Nanomaterials
- Nanomedicine
- Nanometrology and instrumentation
- Nanoparticles
- Nanosensors and other devices
- NEMS
- Organic-inorganic nanostructures
- Photonic structures and devices
- Quantum information
- Structural properties
- Surface patterning and imaging
- Synthesis and processing

In addition to primary research, Nature Nanotechnology also publishes review articles, news and views, research highlights about important papers published in other journals, commentaries, book reviews, correspondence, and analysis of the broader nanotechnology picture — funding, commercialization and the social impact of nanotechnology. In this way, the journal aims to be the voice of the worldwide nanoscience and nanotechnology community.

Nature Nanotechnology offers readers and authors high visibility, access to a broad readership, high standards of copy editing and production, rigorous peer review, rapid publication, and independence from academic societies and other vested interests.

Editors and contact information

Like the other Nature titles, Nature Nanotechnology has no external editorial board. Instead, all editorial decisions are made by a team of full-time professional editors, who are PhD-level scientists. Click here for information about the scientific background of the editors.

General editorial inquiries and correspondence should be addressed to the Editor, at naturenano@nature.com.

Inquiries about the status of a manuscript should be addressed to the Editorial Assistant, at naturenano@nature.com.

Relationship to other Nature journals

Nature Nanotechnology is editorially independent, and its editors make their own decisions, independent of the other Nature journals. It is for authors alone to decide where to submit their manuscripts. Nature will continue to publish the most significant advances in science, including nanotechnology. Nature Nanotechnology publishes landmark papers within the field of nanotechnology alone. Topics covered by other Nature journals (such as materials science, physics and photonics) may feature in Nature Nanotechnology when the work centres on some new development in nanotechnology; otherwise these topics will be the remit of the other relevant journal. For papers that could satisfy the scope of more than one Nature journal, the choice of which journal to submit first lies with the authors.

If a paper is rejected from one Nature journal, the authors can use an automated manuscript transfer service to submit the paper to Nature Nanotechnology via a link sent to them by the editor handling the manuscript. Authors should note that referees' comments (including any confidential comments to the editor) and identities are transferred to the editor of the second journal along with the manuscript. The journal editors will take the previous reviews into account when making their decision, although in some cases the editors may choose to take advice from additional referees. Alternatively, authors may choose to request a fresh review, in which case they should not use the automated transfer link, and the editors will evaluate the paper without reference to the previous review process. For more information, please consult the following:

- Details of the manuscript transfer service
- Listing of all NPG journals and subject areas
- A general explanation of the relationships between Nature titles

Nature Nanotechnology June 2011
Editorial and publishing policies
Please see authors and referees @ npg for detailed information about author and referee services and publication policies at the Nature family of journals. These journals, including Nature Nanotechnology, share a number of common policies including the following:

- Author responsibilities.
- Licence agreement and author copyright.
- Embargo policy and press releases.
- Use of experimental animals and human subjects.
- Competing financial interests.
- Availability of materials and data.
- Digital image integrity and standards.
- Security concerns.
- Refutations, complaints and corrections.
- Duplicate publication.
- Confidentiality and pre-publicity.
- Plagiarism and fabrication.

Impact factor
The 2010 ISI impact factor for Nature Nanotechnology is 30.306, according to the ISI Journal Citation Reports. This places Nature Nanotechnology first not among all primary research journals in nanoscience and nanotechnology.

The 2010 impact factor represents the average number of citations per paper in 2010 and is calculated on the basis of the previous two years’ worth of a particular journal's publications. A more detailed explanation of impact factors appears on the ISI web site.

Abbreviation
The correct abbreviation for abstracting and indexing purposes is Nature Nanotech.

ISSN
The international standard serial number (ISSN) for Nature Nanotechnology is 1748-3387, and the electronic international standard serial number (EISSN) is 1748-3395.

Content Types

Primary research formats
A Letter reports an important novel research study, but is less substantial than an Article. Letters typically occupy four printed journal pages. The text is limited to 1,500 words, excluding the introductory paragraph, Methods, references and figure legends. Letters should have no more than 3-5 display items (figures and/or tables). References are limited to 30.

This format begins with a title of, at most, 15 words, followed by an introductory paragraph (not abstract) of approximately 150 words, summarizing the background, rationale, main results (introduced by “Here we show” or some equivalent phrase) and implications of the study. This paragraph should be referenced, as in Nature style, and should be considered part of the main text, so that any subsequent introductory material avoids too much redundancy with the introductory paragraph.

Letters include received/accepted dates and may be accompanied by supplementary information. Letters are peer reviewed, and authors must provide a competing financial interests statement before publication.

An Article is a substantial novel research study that often involves several techniques or approaches. The main text (excluding abstract, Methods, references and figure legends) is 2,000-3,000 words. Articles have 4-6 display items (figures and/or tables). References are limited to 50.

The maximum title length is 15 words. The abstract is typically 150 words and is unreferenced; it contains a brief account of the background and rationale of the work, followed by a statement of the main conclusions introduced by the phrase “Here we show” or some equivalent. An introduction (without heading) of up to 500 words of referenced text expands on the background of the work (some overlap with the summary is acceptable), followed by a concise, focused account of the findings, ending with one or two short paragraphs of discussion.

Articles include received/accepted dates and may be accompanied by supplementary information. Articles are peer reviewed, and authors must provide a competing financial interests statement before publication.

Other formats
A Review is an authoritative, balanced survey of recent developments in a research field. Although reviews should be recognized as scholarly by specialists in the field, they should be written with a view to informing nonspecialist readers. Thus, reviews should be presented using simple prose, avoiding excessive jargon and technical detail. Reviews are approximately 3,000-4,000 words and typically include 4-6 display items (figures, tables or boxes). References are limited to 100; citations should be selective. Footnotes are not used. The scope of a Review should be broad enough that it is not dominated by the work of a single laboratory, and particularly not by the authors’ own work.

When the discussion is focused on a developing field that might not yet be mature enough for review, a Progress article is more appropriate. Progress articles are up to 2,000 words in length, with up to 4 display items (figures, tables or boxes). References are limited to 50.

Reviews and Progress articles are commissioned by the editors, but proposals including a short synopsis are welcome. Reviews and Progress articles are always peer-reviewed to ensure factual accuracy, appropriate citations and scholarly balance. They do not include received/accepted dates. Authors must provide a competing financial interests statement before publication.

News and Views articles inform readers about the latest advances in nanotechnology, as reported in recently published papers (in Nature Nanotechnology or elsewhere) or at scientific meetings. Most articles are commissioned, but proposals can be made to the Editor in advance of publication of the paper or well before the meeting is held. News and Views articles...
are not peer-reviewed, but undergo editing in consultation with the author. Authors must provide a competing financial interests statement before publication.

**Correspondence** provides readers with a forum for comment on papers published in a previous issue of the journal or to discuss issues relevant to nanotechnology. A Correspondence is rarely more than one printed page and typically is 250-500 words; it is limited to one display item and 10 references. Article titles are omitted from the reference list. Titles for correspondence are supplied by the editors.

In cases where a correspondence is critical of a previous research paper, the authors of the criticized paper are given the opportunity to publish a brief reply. Criticism of opinions or other secondary matter does not involve an automatic right of reply. Refutations are always peer-reviewed. Other types of Correspondence may be peer-reviewed at the editors' discretion. Authors must provide a competing financial interests statement before publication.

**Commentary** articles focus on policy, science and society or purely scientific issues related to nanotechnology. Single-author articles are preferred as this is an 'opinion' section of the journal. Commentaries are usually commissioned by the editors, but proposals are welcome. The main criteria are that they should be of immediate interest to a broad readership and should be written in an accessible, non-technical style. Because the content is variable, the format is also flexible. Figures and diagrams are encouraged, but are not a requirement. Commentaries are typically no longer than 1,500 words and include up to 25 references. Article titles are omitted from the reference list.

Commentaries may be peer-reviewed at the editors' discretion. Authors must provide a competing financial interests statement before publication.

The Books and Arts section publishes timely reviews of books and other technological or cultural resources of interest to scientists and engineers working in the field of nanotechnology. These pieces are generally limited to one page in the journal. Reviews and articles in this section are commissioned, and unsolicited contributions are not accepted, though suggestions for appropriate books are welcome. Authors must provide a competing financial interests statement before publication.

**How to Submit**

**Online submission**

Owing to the volume of manuscripts we receive, we must insist that all submissions be made via our online submission system at mts-nnano.nature.com. Using this system, authors can upload manuscript files (text, figures and supplementary information, including video) directly to our office and check on the status of their manuscripts during the review process. In addition, reviewers can access the manuscript (in a highly secure fashion that maintains referee anonymity) over a direct internet link, which speeds up the review process. Revisions should be uploaded via the link provided in the editor's decision letter. Please do not submit revisions as new manuscripts.

**Submission policies**

Submission to *Nature Nanotechnology* is taken to imply that there is no significant overlap between the submitted manuscript and any other papers from the same authors under consideration or in press elsewhere. (Abstracts or unrefereed web preprints do not compromise novelty.) The authors must include copies of all related manuscripts with any overlap in authorship that are under consideration or in press elsewhere. If a related manuscript is submitted elsewhere while the manuscript is under consideration at *Nature Nanotechnology*, a copy of the related manuscript should be sent to the editor.

The primary affiliation for each author should be the institution where the majority of their work was done. If an author has subsequently moved, the current address may also be stated. If the manuscript includes personal communications, please provide a written statement of permission from any person who is quoted. E-mail permission messages are acceptable.

For information on the review process and how editors make decisions, please see www.nature.com/nnano/authors/ed_process. A high priority of *Nature Nanotechnology* is that all papers be accessible to nonspecialists. Manuscripts are subject to substantial editing, in consultation with the authors, to achieve this goal. After acceptance, a copy editor may make further changes so that the text and figures are readable and clear to those outside the field, and so that papers conform to our style. Contributors are sent proofs and are welcome to discuss proposed changes with the editors, but *Nature Nanotechnology* reserves the right to make the final decision about matters of style and the size of figures.

The editors also reserve the right to reject a paper even after it has been accepted if it becomes apparent that there are serious problems with the scientific content or with violations of our publishing policies.

Additional editorial policies can be found on the *Nature* journals joint policies page at www.nature.com/authors/editorial_policies. This page includes information on manuscripts reviewed at other *Nature* journals, competing financial interests declarations, pre-publication publicity, deposition of data as a condition of publication, availability of data and reagents after publication, human and animal subjects, digital image integrity, biosecurity, refutations, complaints, and correction of mistakes in the journal, duplicate publication, confidentiality and plagiarism. *Nature Nanotechnology* uses Oxford English spelling.

**Costs**

There is a charge of $556 for the first colour figure and $278 for each additional colour figure. Please note that we are unable offer to publish greyscale in print and colour online. Otherwise, there are no submission fees or page charges.

**Advance online publication**

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Nature Nanotechnology provides Advance Online Publication (AOP) of research articles, which benefits authors with an earlier publication date and allows our readers access to accepted papers before they appear in print. Note that papers published online are definitive and may be altered only through the publication of a print corrigendum or erratum, so authors should make every effort to ensure that the page proofs are correct. All AOP articles are given a unique digital object identifier (DOI) number, which can be used to cite the paper before print publication. More details about advance online publication are available at www.nature.com/authors/author_services/about_aop.html.

Cover and other artwork
Authors of accepted papers are encouraged to submit images for consideration as a cover. Cover images are normally linked to a specific paper in that issue, but we may also be able to use other images elsewhere in the journal, such as on the table of contents. Illustrations are selected for their scientific interest and aesthetic appeal. Please send prints or electronic files (rather than slides) in the first instance. Please also include a clear and concise legend explaining the image.

Preparing the manuscript
Nature Nanotechnology is read by scientists from diverse backgrounds, including biology, chemistry, engineering, materials science, medicine, physics and other subjects. In addition, many are not native English speakers. Authors should therefore give careful thought to how their findings may be communicated clearly. Technical jargon should be avoided as far as possible and clearly explained where its use is unavoidable. Abbreviations, particularly those that are not standard, should also be kept to a minimum, and should be defined at their first occurrence. The background, rationale and main conclusions of the study should be clearly explained. Titles and abstracts in particular should be written in language that will be readily intelligible to any scientist. We strongly recommend that authors ask a colleague with different expertise to review the manuscript before submission, in order to identify concepts and terminology that may present difficulties to non-specialist.

Information about the different types of contributions, along with their length and figure limits can be found in the Content Types section above. The journal's format requirements are described below.

Manuscripts should be prepared for online submission. Online submissions include a cover letter, a manuscript text file, individual figure files and optional Supplementary Information files.

Cover Letter
Authors should provide a cover letter that includes the affiliation and contact information for the corresponding author. Authors should briefly discuss the work's importance and explain why the work is considered appropriate for the diverse readership of Nature Nanotechnology. Any prior discussions with a Nature Nanotechnology editor about the work described in the manuscript should also be mentioned.

Manuscript text
All textual content is provided in a single file, prepared using either Word or TeX/LaTeX; figures are provided in individual files (see below).

The manuscript text file should include the following parts, in order: a title page with author affiliations and contact information (the corresponding author should be identified with an asterisk); the sections required for each content type (see information for Letters and Articles) then References, Acknowledgements (optional), Author Contributions, Competing Financial Interests statement, Figure Legends, and Tables.

Word: Nature Nanotechnology does not use a manuscript template for Word documents. The manuscript file should be formatted as double-spaced, single-column text without justification. Pages should be numbered using an Arabic numeral in the footer of each page. Standard fonts are recommended and the 'symbols' font should be used for representing Greek characters.

TeX/LaTeX: Authors submitting LaTeX files may use any of the standard class files such as article.cls, rvtex.cls or amsart.cls. Non-standard fonts should be avoided; please use the default Computer Modern fonts. For the inclusion of graphics, we recommend graphicx.sty. Please use numerical references only for citations. There is no need to spend time visually formatting the manuscript: Nature Nanotechnology style will be imposed automatically when the paper is prepared for publication. References should be included within the manuscript file itself as our system cannot accept BibTeX bibliography files. Authors who wish to use BibTeX to prepare their references should therefore copy the reference list from the .bbl file that BibTeX generates and paste it into the main manuscript .tex file (and delete the associated bibliography and \bibliographystyle commands). As a final precaution, authors should ensure that the complete .tex file compiles successfully on their own system with no errors or warnings, before submission.

Acknowledgements: Acknowledgements should be brief, and should not include thanks to anonymous referees and editors, or effusive comments. Grant or contribution numbers may be acknowledged.

Author contributions: Nature Nanotechnology requires an Author Contribution statement as described in the Authorship section of our joint Editorial policies.

Competing financial interests: Submission of a signed Competing Financial Interests Statement is required for all content of the journal. This statement will be published at the end of Letters, Articles, Reviews and Progress articles, whether or not a competing financial interest is reported. For all other content types, a statement will be published only if a competing financial interest is reported. In cases where the authors declare a competing financial interest, a short statement to that effect is published as part of the article, which is linked to a more detailed version available online.
References: References are numbered sequentially as they appear in the text, tables and figure legends. Only one publication is given for each number. Only papers that have been published or accepted by a named publication or recognized preprint server should be in the numbered list; preprints of accepted papers in the reference list should be submitted with the manuscript. Published conference abstracts and numbered patents may be included in the reference list. Grant details and acknowledgments are not permitted as numbered references. Footnotes are not used.

BibTeX bibliography files cannot be accepted. LaTeX submission must contain all references within the manuscript .tex file itself (see above TeX/LaTeX section for more details).

Nature Nanotechnology uses standard Nature referencing style. All authors should be included in reference lists unless there are more than five, in which case only the first author should be given, followed by et al.' Authors should be listed last name first, followed by a comma and initials (followed by full stops) of given names. Article titles should be in Roman text, the first word of the title should be capitalized and the title written exactly as it appears in the work cited, ending with a full stop. Book titles should be given in italics and all words in the title should have initial capitals. Journal names are italicized and abbreviated (with full stops) according to common usage. Volume numbers and the subsequent comma appear in bold.


For book citations, the publisher and city of publication are required. Example: Jones, R. A. L. Soft Machines: Nanotechnology and Life Ch. 3 (Oxford Univ. Press, Oxford, 2004).

Figure legends: Figure legends for Articles or Letters begin with a brief title for the whole figure and continue with a short description of each panel and the symbols used; they should not contain any details of methods. Text for figure legends should be provided in numerical order after the references.

Tables: Please submit tables at the end of your text document (in Word or TeX/LaTeX, as appropriate). Tables that include statistical analysis of data should describe their standards of error analysis and ranges in a table legend.

Figures: Figures should be numbered separately with Arabic numerals in the order of occurrence in the text of the manuscript. One- or two-column format figures are preferred. When appropriate, figures should include error bars. A description of the statistical treatment of error analysis should be included in the figure or scheme legend.

Figure lettering should be in a clear, sans-serif typeface (for example, Helvetica); if possible, the same typeface in approximately the same font size should be used for all figures in a paper. Use symbol font for Greek letters. All display items should be on a white background, and should avoid excessive boxing, unnecessary colour, spurious decorative effects (such as three-dimensional 'skyscraper' histograms) and highly pixelated computer drawings. The vertical axis of histograms should not be truncated to exaggerate small differences. Labelling must be of sufficient size and contrast to be readable, even after appropriate reduction. The thinnest lines in the final figure should be no smaller than one point wide. Reasonable requests to enlarge figures will be considered, but editors will make the final decision on figure size. Authors will see a proof of figures.

Figures divided into parts should be labelled with a lower-case bold a, b, and so on, in the same type size as used elsewhere in the figure. Lettering in figures should be in lower-case type, with only the first letter of each label capitalized. Units should have a single space between the number and the unit, and follow SI nomenclature (for example, ms rather than msec) or the nomenclature common to a particular field. Thousands should be separated by commas (1,000). Unusual units or abbreviations should be spelled out in full or defined in the legend. Scale bars should be used rather than magnification factors, with the length of the bar defined in the legend rather than on the bar itself. In legends, please use visual cues rather than verbal explanations, such as "open red triangles".

Unnecessary figures should be avoided: data presented in small tables or histograms, for instance, can generally be stated briefly in the text instead. Figures should not contain more than one panel unless the parts are logically connected; each panel of a multipart figure should be sized so that the whole figure can be reduced by the same amount and reproduced on the printed page at the smallest size at which essential details are visible.

When a manuscript is accepted for publication, we will ask for high-resolution figure files, possibly in a different electronic format. This information will be included in the acceptance letter. See below for details of digital image production and submission.

Equations: Equations and mathematical expressions should be provided in the main text of the paper. Equations that are referred to in the text are identified by parenthetical numbers, such as (1), and are referred to in the manuscript as "equation (1)".

Supplementary information: Supplementary information should be submitted with the manuscript and will be sent to referees during peer review. Supplementary information is not copy-edited by Nature Nanotechnology, so authors should ensure that it is clearly and succinctly presented, and that the style and terminology conform with the rest of the paper. The following guidelines detail the creation, citation and submission of supplementary information. Please note that modification of supplementary information after the paper is published requires a formal correction, so authors are encouraged to check their supplementary information carefully before submitting the final version.

Where there is supplementary information to be included exclusively in the online version of a paper published in Nature Nanotechnology, please follow these guidelines, or publication may be delayed.
Refer to each piece of supplementary information at least once within the text of the main article (the article that is published in the print issue of the journal), as follows:

- Designate each item as Supplementary Table, Figure, Video, Audio, Note, Data, Discussion, Equations or Methods. Number Supplementary Tables and Figures as, for example, "Supplementary Table 1". This numbering should be separate from that used in tables and figures appearing in the main printed article. Supplementary Note or Methods should not be numbered; titles for these are optional.
- Refer to each piece of supplementary material at the appropriate point(s) in the main article. Be sure to include the word "Supplementary" each time one is mentioned. Please do not refer to individual panels of supplementary figures.

Figure files should be submitted as web-ready files through the online submission system at mts-nano.nature.com.

Submit separate electronic files (each including a brief title and legend) in any of these formats:

- .txt Plain ASCII text
- .gif GIF image
- .htm HTML document
- .doc MS Word document
- .jpg JPEG image
- .swf Flash movie
- .xls MS Excel spreadsheet
- .pdf Adobe Acrobat file
- .mov QuickTime movie
- .ppt MS Power Point slide
- .wav Audio file

File sizes should be as small as possible, with a maximum size of 30 MB, so that they can be downloaded quickly. The combined total size of all files must not exceed 150 MB.

All panels of a figure or table (for example, Fig. 1a, b and c) should be combined into one file; please do not send as separate files. Image files should be just large enough to view when the screen resolution is set to 640 x 480 pixels. Remember to include a brief title and legend (preferably incorporated into the image file to appear near the image) as part of every electronic figure submitted, and a title as part of every table.

Audio and video files should use a frame size no larger than 320 x 240 pixels. The file size of each should not exceed 30 MB.

Further queries about submission and preparation of supplementary information should be directed to naturenano@nature.com.

Preparing figures for publication

It is important to supply production quality figures when requested by the editor. Failure to do so, or to adhere to the following guidelines, can significantly delay publication of your work.

When possible, we prefer to use original digital figures to ensure the highest quality reproduction in the journal. For optimal results, prepare figures at actual size for the printed journal. When creating and submitting digital files, please follow the guidelines below.

Authors are responsible for obtaining permission to publish any figures or illustrations that are protected by copyright, including figures published elsewhere and pictures taken by professional photographers. The journal cannot publish images downloaded from the internet without appropriate permission.

Line art, graphs, charts and schematics: All line art, graphs, charts and schematics should be supplied in vector format, such as Encapsulated PostScript (.EPS), Adobe Illustrator (.AI), or Portable Document Format (.PDF), and should be saved or exported as such directly from the application in which they were made. This allows us to restyle to our journal house style.

We prefer to work with Adobe Illustrator but can accept Word and PowerPoint files.

They should not be flattened, compressed, converted or saved as bitmaps, jpegs or other non-vector file types. If line art figures cannot be supplied as vector files they should be supplied at 1200 DPI and as close to print size as possible.

Photographic and bitmapped images: All photographic and bitmapped images should be supplied in TIFF format at a minimum of 300 DPI and as close to print size as possible. For final print size please use our column widths as a guide. A single column width measures at 88 mm and a double column width measures at 170 mm. In practice this means that the absolute width of single column figures should be no less than 1040 pixels wide and double column figures should be no less than 2080 pixels wide (excluding peripheral white space).

We can accept Word and PowerPoint files but please supply any placed images as separate tiffs, prepared as above. If preparing in Adobe Photoshop please type all text on separate text layers so that we can retype in our own house style. If this is not possible please supply two sets of figures - one with labelling for our reference, and one without labelling. Please make sure any scale bars or important markers are left on both sets.

Where possible please supply colour photographic images in CMYK colour mode as colour detail may be lost converting from RGB to CMYK.

Please do not scan laser printouts of figures and send them to us as digital files. The dot pattern on a laser print often creates a moiré pattern when scanned.

Figures that do not meet these standards will not reproduce well and may delay publication until we receive high-resolution images or high-quality printouts. We cannot be held responsible for assuming the cost of corrected reprints should poor quality images need to be used.

Chemical structure display items: Schemes and figures that contain chemical structures should be produced using ChemDraw or a similar program. All chemical compounds must be assigned a bold, Arabic numeral in the order in which the compounds are presented in the manuscript text. Schemes and figures containing chemical structures should be submitted in a size appropriate for direct incorporation into the printed journal. Authors using ChemDraw should use the following preferences and submit the files at 100% as EPS files.
• Drawing settings: chain angle, 120° bond spacing, 18% of width; fixed length, 14.4 pt; bold width, 2.0 pt; line width, 0.6 pt; margin width 1.6 pt; hash spacing 2.5 pt.
• Text settings: font, Arial or Helvetica; size, 10 pt.
• Preferences: units, points; tolerances, 3 pixel.

For information about: bioinformatics; new structures; statistical guidelines; characterization of chemical and biomolecular materials; nomenclature and abbreviations, please see the Appendix at the end of this document.

Editorial Process

Initial submission
Papers should be submitted via the online submission system. Each new submission is assigned to a primary editor, who reads the paper, consults with the other editors, and decides whether it should be sent for peer review. The author should identify whether the work described in the manuscript has been discussed with a specific Nature Nanotechnology editor before submission. Many papers describing solid studies of interest to those in the field are nonetheless judged to be unlikely to compete successfully with the best work submitted to the journal.

Like other journals in the Nature family, Nature Nanotechnology has no external editorial board. However, if a paper’s importance within the field is unclear, an editor may request advice from outside experts in deciding whether to review it. The novelty of a submitted paper is considered to be compromised if it has significant conceptual overlap with a published paper or one accepted for publication by Nature Nanotechnology. Preprint archives do not compromise novelty.

If a paper was previously reviewed at another Nature journal, the authors can use an automated manuscript transfer service to transfer the referees’ reports to Nature Nanotechnology via a link sent by the editor who handled the manuscript. In that case, the journal editors will take the previous reviews into account when making their decision, although in some cases the editors may choose to take advice from additional or alternative referees. Alternatively, authors may choose to request a fresh review, in which case they should not use the automated transfer link, and the editors will evaluate the paper without reference to the previous review process. However, this decision must be made at the time of initial submission and cannot be changed later.

If the authors ask the editors to consider the previous reviews, they should include a note explaining the relationship between the submitted manuscript and the previous submission and (assuming it has been revised in light of the referees’ criticisms) giving a point-by-point response to the referees. In cases where the work was felt to be of high quality, papers can sometimes be accepted without further review, but if there were serious criticisms, the editors will consider them in making the decision. In the event of publication, the received date is the date of submission to Nature Nanotechnology.

Peer review
The corresponding author is notified by e-mail when the editor decides to send a paper for review. Authors may suggest referees; these suggestions are often helpful, although they are not always followed. By policy, referees are not identified to the authors, except at the request of the referee.

Conceptually similar manuscripts are held to the same editorial standards as far as possible, and so they are often sent to the same referees. However, each of the co-submitted manuscripts must meet the criteria for publication without reference to the other paper. Thus if one paper is substantially less complete or convincing than the other, it may be rejected, even if the papers reach the same conclusion.

Decision after review and revision
When making a decision after review, editors consider not only how good the paper is now, but also how good it might become after revision. In cases where the referees have requested well-defined changes to the manuscript that do not appear to require extensive further experiments, editors may request a revised manuscript that addresses the referees’ concerns. The revised version is normally sent back to some or all of the original referees for re-review. The decision letter will specify a deadline (typically a few weeks), and revisions that are returned within this period will retain their original submission date.

In cases where the referees’ concerns are more wide-ranging, editors will normally reject the manuscript. If the editors feel the work is of potential interest to the journal, however, they may express interest in seeing a future resubmission. The resubmitted manuscript may be sent back to the original referees or to new referees, at the editors’ discretion. In such cases, revised manuscripts will not retain their earlier submission date.

In either case, the revised manuscript should be accompanied by a cover letter that includes a point-by-point response to referees’ comments and an explanation of how the manuscript has been changed.

An invited revision should be submitted via the revision link to the online submission system provided in the decision letter, not as a new manuscript.

Final submission and acceptance
A request for final submission is sent when the paper is nearly ready to publish, possibly requiring some text changes but no revisions to the data or conclusions. These letters are accompanied by detailed comments on the paper’s format from the copy editor. At this stage, authors may receive an extensively edited manuscript from the editor indicating editorial concerns that must be addressed in the revision. A high priority of Nature Nanotechnology is that all papers be accessible to nonspecialists. Manuscripts are subject to substantial editing to achieve this goal. After acceptance, a copy editor may make further changes so that the text and figures are readable and clear to those outside the field, and so that papers conform to our style. Nature Nanotechnology uses Oxford English spelling.
For the final revision, authors should use the revision link to the online submission system provided in the decision letter to upload a final version of the text with all the requested format changes.

When all remaining editorial issues are resolved, the paper is formally accepted. The received date is the date on which the editors received the original (or if previously rejected, the resubmitted) manuscript. The accepted date is when the editor sends the acceptance letter.

Contributors are sent proofs and are welcome to discuss proposed changes with the editors, but Nature Nanotechnology reserves the right to make the final decision about matters of style and the size of figures.

**Appeals**

Even in cases where editors did not invite resubmission, some authors ask the editors to reconsider a rejection decision. These are considered appeals, which, by policy, must take second place to the normal workload. In practice, this means that decisions on appeals often take several weeks.

Decisions are reversed on appeal only if the editors are convinced that the original decision was a serious mistake, not merely a borderline call that could have gone either way. Further consideration may be merited if a referee made substantial errors of fact or showed evidence of bias, but only if a reversal of that referee's opinion would have changed the original decision. Similarly, disputes on factual issues need not be resolved unless they were critical to the outcome. Thus, after careful consideration of the authors' points, most appeals are rejected by the editors.

If an appeal merits further consideration, the editors may send the authors' response or the revised paper to one or more referees, or they may ask one referee to comment on the concerns raised by another referee. On occasion, particularly if the editors feel that additional technical expertise is needed to make a decision, they may obtain advice from an additional referee.

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**Enquiries about the status of a manuscript** should be addressed to the Editorial Assistant at naturenano@nature.com.

**Submissions**

Manuscripts should be submitted through our online submission system at mts-nnano.nature.com: see the How to Submit section above for a general guide to manuscript preparation and submission. Please do not send complete manuscripts by e-mail unless specifically requested. Receipt of submitted manuscripts will be acknowledged by e-mail.

**Other information**

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**Appendix**

**Bioinformatics**

For bioinformatics manuscripts, please send four copies of a CD containing any new algorithms for data analysis along with other resources necessary to use the algorithm, such as the user manual or spreadsheets. The CDs should be mailed to Nature Nanotechnology, 4 Crinan Street, London, N1 9XW, UK.

**New structures**

Manuscripts reporting new structures should contain a table summarizing structural and refinement statistics (template for X-ray crystallography; template for NMR). To facilitate assessment of the quality of the structural data, a stereo image of a portion of the electron density map (for crystallography papers) or of the superimposed lowest energy structures (>10; for NMR papers) should be provided with the submitted manuscript. If the reported structure represents a novel overall fold, a stereo image of the entire structure (as a backbone trace) should also be provided.

**Statistical guidelines**

Every article that contains statistical testing should state the name of the statistical test, the n for each statistical analysis, the comparisons of interest, a justification for the use of that test (including, for example, a discussion of the normality of the data when the test is appropriate only for normal data), the alpha level for all tests, whether the tests were one-tailed or two-tailed, and the actual P value for each test (not merely "significant" or "P < .05"). It should be clear what statistical test was used to generate every P value.

Data sets should be summarized with descriptive statistics, which should include the n for each data set, a clearly labelled measure of centre (such as the mean or the median), and a clearly labelled measure of variability (such as standard deviation or range). Ranges are more appropriate than standard deviations or standard errors for small data sets. Graphs should include clearly labelled error bars. Authors must state whether a number that follows the ± sign is a standard error (s.e.m.) or a standard deviation (s.d.).

Authors must justify the use of a particular test and explain whether their data conform to the assumptions of the tests. Three errors are particularly common.

**Multiple comparisons:** When making multiple statistical comparisons on a single data set, authors should explain how they adjusted the alpha level to avoid an inflated Type I error rate, or they should select statistical tests appropriate for multiple...
groups (such as ANOVA rather than a series of t-tests).

- **Normal distribution:** Many statistical tests require that the data be approximately normally distributed; when using these tests, authors should explain how they tested their data for normality. If the data do not meet the assumptions of the test, then a non-parametric alternative should be used instead.

- **Small sample size:** When the sample size is small (less than about 10), authors should use tests appropriate to small samples or justify their use of large-sample tests.

A checklist to help authors minimize the chance of statistical errors can be found at [www.mged.org/Workgroups/MIAME/miame_checklist.html](http://www.mged.org/Workgroups/MIAME/miame_checklist.html).

### Characterization of chemical and biomolecular materials

Manuscripts submitted to *Nature Nanotechnology* that report new chemical or biomolecular entities will be held to rigorous standards with respect to experimental methods and characterization. Authors must provide adequate data to support their assignment of identity and purity for each new compound described in the manuscript.

Chemical identity for most organic and organometallic compounds should be established through spectroscopic analysis. Standard peak listings (see preparation of methods section below) for 1H-NMR and proton-decoupled 13C-NMR spectra should be provided for all new compounds. Other NMR spectroscopic data should be reported (19F-NMR, etc.) when appropriate. For new materials, authors should also provide mass spectral data to support molecular weight identity. High-Resolution Mass Spectral (HRMS) data are preferred. UV or IR spectral data may be reported for characteristic functional group identification when appropriate. Melting point ranges should be provided for crystalline materials. Specific rotations should be reported for chiral compounds. Authors should provide references, rather than detailed procedures, for known compounds, unless their protocols represent a departure from or improvement on published methods.

**Combinatorial compound libraries:** Authors describing the preparation of combinatorial libraries should include standard characterization data for a diverse panel of library members.

**Biomolecular identity:** For new biopolymeric materials (oligosaccharides, peptides, nucleic acids, etc.) direct structural analysis by NMR spectroscopic methods may not be possible. In these cases, authors must provide evidence of identity based on: sequence (when appropriate) and mass spectral (MS) characterization. Detailed characterization of standard oligonucleotide reagents (e.g., primers) for molecular biology experiments is not required.

**Biological constructs:** Authors should provide sequencing or functional data which validates the identity of their biological constructs (plasmids, fusion proteins, site-directed mutants, etc.) either in the manuscript text or the Methods section, as appropriate.

### Sample purity

Evidence of sample purity is requested for each new compound. Methods for purity analysis depend on the compound class. For most organic and organometallic compounds, purity may be demonstrated by high field 1H-NMR or 13C-NMR spectroscopic data, although elemental analysis (±0.4%) is encouraged for small molecules. Quantitative analytical methods including chromatographic (GC, HPLC, etc.) or electrophoretic analyses may be used to demonstrate purity for small molecules and biopolymeric materials.

### Preparation of Methods Section

Authors must ensure that their manuscripts include adequate experimental and characterization data necessary for others in the field to reproduce their work. For Articles and Letters, essential methods should be reported in the Methods section. Authors of all content types are encouraged to include important additional protocols or data in Supplementary Information, which will be peer-reviewed.

**General methods:** Descriptions of standard protocols and experimental procedures should appear in Supplementary Information. Commercial suppliers of reagents or instrumentation should be identified only when the source is critical to the outcome of the experiments. Sources for kits should be identified in the Methods section or Supplementary Information.

**Synthetic protocols:** When appropriate, experimental protocols that describe the synthesis of new compounds should be included. The systematic name of the compound and its bold, Arabic numeral are used as the heading for the experimental protocol. Thereafter, the compound is represented by its assigned bold numeral. Authors should describe the experimental protocol in detail, referring to amounts of reagents in parentheses, when possible (e.g., 1.03 g, 0.100 mmol). Standard abbreviations for reagents and solvents are encouraged. Safety hazards posed by reagents or protocols should be identified clearly. Isolated mass and percent yields should be reported at the end of each protocol.

**Detailed spectral data for new compounds** should be provided in list form (see below). Figures containing spectra generally will not be published as a manuscript figure unless the data are directly relevant to the central conclusions of the paper. Authors are encouraged to include high-quality images of spectral data for key compounds in the Supplementary Information. Specific NMR spectroscopic assignments should be listed after integration values only if they were unambiguously determined by multi-dimensional NMR spectroscopy or decoupling experiments. Authors should provide information about how assignments were made in a general Methods section.

Example format for compound characterization data. mp: 100-102 °C (lit. 99-101 °C); TLC (CHCl₃:MeOH, 98:2 v/v): Rᵢ = 0.23; δ = -21.5 (c = 0.1 in n-hexane); 1H-NMR (400 MHz, CDCl₃): δ 9.30 (s, 1H), 7.55-7.41 (m, 6H), 5.61 (d, J = 5.5 Hz, 1H), 5.40 (d, J = 5.5 Hz, 1H), 4.93 (m, 1 H), 4.20 (q, J = 8.5 Hz, 2H), 2.11 (s, 3H), 1.25 (t, J = 8.5 Hz, 3H);
\textsuperscript{13}C-NMR (125 MHz, CDCl\textsubscript{3}): \( \delta \) 165.4, 165.0, 140.5, 138.7, 131.5, 129.2, 118.6, 84.2, 75.8, 66.7, 37.9, 20.1; IR (Nujol): 1765 cm\textsuperscript{-1}; UV/Vis: \( \lambda_{\text{max}} \) 267 nm; HRMS (m/z): [M]\textsuperscript{+} calculated for C\textsubscript{20}H\textsubscript{15}Cl\textsubscript{2}NO\textsubscript{5}, 420.0406; found, 420.0412; Analysis (calcd, found for C\textsubscript{20}H\textsubscript{15}Cl\textsubscript{2}NO\textsubscript{5}): C (57.16, 57.22), H (3.60, 3.61), Cl (16.87, 16.88), N (3.33, 3.33), O (19.04, 19.09).

Crystallographic data for small molecules
Manuscripts reporting new three-dimensional structures of small molecules from crystallographic analysis should include a structural figure with probability ellipsoids and a .cif file. Small molecular crystallographic data should be submitted upon publication to the Cambridge Structural Database.

Nomenclature and abbreviations
When possible, authors should refer to chemical compounds and biomolecules using systematic nomenclature, preferably using IUPAC and IUBMB rules. Standard chemical and biological abbreviations should be used. Unconventional or specialist abbreviations should be defined at their first occurrence in the text.