

# Submitting electronic artwork

This guide contains information about submitting electronic artwork to our journals. If you have further queries after reading this guide, please [contact us](#) for help.

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## [Checklist](#)

Before you submit any artwork please check this list to make sure your files meet our criteria:

- Files are provided in our preferred file format(s) if possible
- Artwork is the correct resolution for its style
- All images are the size intended for publication and you have removed all unnecessary elements and white spaces
- All fonts used are embedded and are standard fonts (Helvetica/Arial/Times New Roman/Symbol), and font size is consistent
- Any lines are a minimum of 0.3pt
- Images do not contain any layers or transparent objects
- File names follow the naming convention
- Artwork is provided in separate files to the main text
- Captions and figures are provided in separate files, and you have secured all rights and permissions

## [Third-party material](#)

If you want to include material in your article that is owned and held in copyright by a third party, you must obtain the necessary written permission.

Third-party material could include:

- Proprietary text
- Illustrations
- Tables
- Any other material owned by a third party, including data, audio, video, film stills, screenshots, musical notation, and any supplemental material.

Please read our [guide to using third-party material](#) if you are including material that is not your own.

## [How to submit your electronic artwork](#)

### [Preparing your files](#)

Before you begin the process of submitting your electronic artwork, please make sure your files are in the correct format, as detailed below.

#### [Fonts](#)

Use standard fonts such as Times, Helvetica, Arial, and Symbol. All fonts should be embedded in the image files. Any fonts that are not embedded will be replaced by Courier which can result in character loss or realignment.

To embed fonts in a Microsoft Word document, simply click on *File > Options > Save > Embed Fonts in the File*.

Keep the font size consistent throughout your work. Do not use effects such as outlining and shadows on any lettering.

#### [Recommended image resolutions](#)

Color photographic images	300dpi
Grayscale photographic images	600dpi
Line art or monochrome images	1200dpi
Combination images (photographs and labelling)	600dpi

#### [Size](#)

Please supply image files in the highest resolution possible. Check the individual journal's [instructions for authors](#) page for specific requirements, and [contact us](#) if you have any questions.

Try to avoid large file sizes and remove any elements that are not intended for publication, including any excess space around the image. Make sure that the image files do not contain any layers or transparent objects.

Read more information from Adobe on [checking image resolutions](#).

#### [File formats for submission to peer review](#)

For compatibility with our peer review systems, please submit electronic artwork files in one of our preferred formats:

- EPS
- PS
- JPEG
- TIFF
- Microsoft Word (DOC or DOCX only)

You can supply any supplementary materials, or files which do not need to be peer reviewed, in any of the above file formats, as well as:

- SVG
- AI
- BMP

- Microsoft Excel

Search engines cannot easily read text in image-based files such as JPEG, BMP, PNG etc. after indexing. This makes it difficult for caption-text, graphs, tables, and keywords included in a graphical abstract to be discovered online. If you are submitting artwork which includes text, please use one of the following formats:

- EPS
- PS

Please do not supply files in PDF format because these are 'locked' files and incompatible with our workflow software.

#### [PS and EPS \(PostScript and Encapsulated PostScript\)](#)

PostScript and Encapsulated PostScript should be high-resolution and all fonts should be embedded. Minimum line weight is 0.3pt for black lines on a white background. This is the recommended format for line art, combinations of photographs, and labeling.

We cannot guarantee the quality of images supplied in other formats.

#### [Creating JPEG and EPS](#)

It is possible to *Save As* or *Export As* JPEG or EPS from most graphics applications. You should export JPEGs at maximum quality.

JPEG and EPS files often need you to install a PostScript printer driver to your computer, you can then create the files using the *Print to file* function.

#### [Placement within manuscript files](#)

You must save figures separately to text, do not embed them in the manuscript file. Check your chosen journal's instructions for authors page for more specific requirements regarding image placement in submitted manuscript files.

### [Submitting your electronic artwork](#)

If you are using [ScholarOne Manuscripts](#) or [Editorial Manager](#) to submit your manuscript, you should upload image files as separate files, along with the main text and any supporting files (such as captions).

If the preferred submission method for the journal is email, you should supply the files via a File Transfer Protocol (FTP) site such as DropBox or ZendTo, preferably compressed as a .zip file. Check your chosen journal's instructions for authors page for information on the preferred submission method.

### [Color](#)

Half-tones, scans, photographs and transparencies won't normally be reproduced in color unless agreed by the journal editor. All images and figures will be reproduced in black and white in the printed journal, but in color in the online journal.

Some journals offer a limited number of free color pages within the annual page allowance. Authors should restrict their use of color to situations where it is necessary on scientific, and not merely cosmetic grounds. If there is no free color allowance, authors may be given the option to pay color printing charges. Any use of color in print will be at the editor's discretion. The journal's instructions for authors page will confirm if there is a free color allowance or not.

Please note, if the journal publishes artwork in color online but in grayscale in print, it isn't necessary to supply the grayscale conversion for a color image file.

### [Captions](#)

Do not include captions and figure titles with your image files. Supply these separately as part of the file containing the complete text of your manuscript and make sure that you number them correspondingly.

Captions should be succinct but descriptive. Please make sure you include the necessary credit line or acknowledgments if you have been given permission to use the image. If the image is the property of the author, you should also acknowledge this in the caption.

Explanatory notes or a key should be present if the figure contains patterns, colors, symbols, or other formatting that indicates significant data. Add a key if you include any symbols, abbreviations, etc. in the figure but not elsewhere within the text.

### [File naming conventions](#)

Please name artwork files as Figure 1, 2, 3... etc. according to the order they appear in the text. In multi-part figures, each part should be labeled [e.g. Figure 1(a), Figure 1(b)].

### [3D Objects](#)

Supply 3D objects to us in U3D format (this is currently the only 3D format Adobe Acrobat supports). Embed U3D files into a single blank PDF page before submitting them. Adobe recommends a file size of 10MB (ideally smaller) per 3D object.

We recommend including only 1 or 2 3D objects per article to ensure faster download speeds and interactive performance.

Please also supply a flat image-only version of each object to be used for the print and HTML versions of the article.

Please note: we can only guarantee that embedded interactive images will function correctly when a user opens the PDF using Adobe Acrobat. If the reader opens the PDF directly within a web browser, such as Internet Explorer or Chrome, the interactive elements may not function correctly.

Please remember to check the individual journal's [instructions for authors](#) page for specific requirements, and [contact us](#) if you have any questions.

## [Frequently asked questions](#)

Is it better to supply artwork as a hardcopy or electronically?

Supplying artwork in electronic form allows us to reproduce it more faithfully. Quality can be lost when scanning a hard copy print, so generally it is better to use a high-quality electronic image file instead. It is also easier to modify electronic files.

How do I create an EPS file?

Most graphic applications allow you to save as EPS files. However, you may need to install a PostScript printer driver to your computer, then save the file using the 'print to file' option. Read more [information on how to generate an EPS file](#).

Which format should I use to save a color image?

We recommend that you save color photographic images as files with a minimum 300dpi. If the photograph also includes labeling, it should be saved as an EPS or JPEG file.

Which format should I use to save a black and white image?

If the image is a photograph, we recommend that you save it as a file with 600dpi. If the file is line art only, we advise you to save it as a JPEG or EPS file with a minimum line weight of 0.3pt

What is the difference between the image that is published online and the one that appears in print?

Online images generally do not need as high resolution as those that appear in print. This is because any color information that is discarded, or any detail that is lost, may not be noticed on a monitor but will be more apparent in print.

How do I check the resolution of my artwork?

You can check the resolution of your artwork using image editing software. For example, to check the resolution of an image file in Adobe Photoshop select *Image > Resize > Image size*.

Why doesn't my image appear in color in print when it does online?

Half-tones, scans, photographs, and transparencies will not normally be reproduced in color unless agreed by the journal editor. In some cases, the journal will publish the articles in color online and in grayscale in print.

While some journals offer a limited number of free color pages within the annual page allowance, we advise that this is reserved for occasions when the color is necessary for scientific and not cosmetic reasons. In other cases, the author may be asked to pay for images to appear in color. However, any use of color or black and white is entirely at the editor's discretion.

Information on color pages and charges may be found on each journal's [Instructions for Authors](#) page.

Why has the font in my image been changed?

If the fonts you used in the image were not embedded in the file, they will be replaced with Courier. This can lead to character loss and realignment. To prevent this, please embed the fonts. Select *Save as > Tools > Saving Options > Embed all fonts*.

Is there a difference between the images used for peer review and those that appear in print?

Images used for peer review tend to be of a lower quality than the images used in the final publication. Please make sure that once your article has been accepted for publication you upload images in a higher resolution. For more information on the resolutions required for different types of

images please see the section on file formats.

My file is too big to send via email. What should I do?

To make the files small enough to send via email you can ZIP them. To do this, once you have saved the file, right click on the icon and select *Send to > Compressed (zipped) folder*

What size will my image appear in print?

We recommend that you send your image files in the size you wish them to be published. As a general guide, images should usually fit to the size of a column or a page.



## Glossary

*U3D* Universal 3D is a compressed file format standard for 3D computer graphics data.

*AI* Adobe Illustrator Artwork is a proprietary file format developed by Adobe Systems for representing single-page vector-based drawings in either the EPS or PDF formats.

*Bitmap* A file format used to store digital images. Bitmaps consist of pixels in a grid. They are resolution dependent which means it is difficult to change the size of the image without losing some of the quality. Common bitmap formats include BMP, GIF, JPEG and TIFF. All scanned images and images from digital cameras are bitmaps.

*BMP* A standard bitmap format found on computers using the Windows operating system for storing images. BMPs tend to have very large file sizes compared to other bitmap formats.

*CMYK* Cyan, Magenta, Yellow, Black (K stands for Key Color). A subtractive color model used in printing.

*Combination artwork* Artwork that comprises both continuous tone and line/vector elements.

*Compression* The process of reducing the size of an image file, e.g. zipping a file.

*DPI* Dots/pixels per inch, a measure of printing resolution. Usually a higher dpi means a clearer image. We require files that are at least 300dpi for photographic images and 600dpi for all other images.

*EPS* Encapsulated PostScript. A file format recommended for combination artwork and line art.

*FTP* File Transfer Protocol. A standard network protocol used to transfer a file from one computer to another over a network such as the internet.

*GIF* Graphics Interchange Format. A bitmap file format that can be used for images containing few colors. This is a format that should only be used for images intended for online publication.

*Grayscale* Images composed of black, white and around 256 intermediate shades of gray.

*Halftone* Traditional halftone printing converts continuous tone into dots of varying sizes. The size of the dot represents the ink density and is not related to the dpi.

*JPEG* A commonly used method of compressing photographic images. It is a suitable format for images that will only be appearing online and is adequate for print in some cases.

*Layer* A layer is a component of a complex image. Each layer contains part of the image e.g. text, background etc. Layers can be useful as they allow you to manipulate parts of your image separately. Before submitting artwork, all layers need to be flattened.

*Line art* Line art is any image that is composed of lines and text, such as a graph.

*Line weight* Line weight is the relative thickness of a line against a background. For a black line against a white background we recommend a minimum line weight of 0.3pt.

*Monochrome* An image displayed in a single color, or in shades of a single color.

*PDF* Portable document format. Allows different users to view files if they don't have the same software.

*Pixel* A pixel (or picture element) is a single point in a raster image. It is the smallest unit of an image that can be controlled. Each pixel is given a position and a color value. The greater the number of pixels the higher the resolution, and the clearer the image.

*PS* PostScript. A page description language that describes a page's graphic and text content. A PostScript printer can be used to create EPS and PDF files.

*Raster image* Another name for a bitmap image.

*Resolution* The amount of detail an image holds. The higher the resolution the greater the detail. DPI is the unit of measurement for resolution.

*RGB* An additive color model used for printing.

*SVG* Scalable Vector Graphics. An XML-based vector image format for two-dimensional graphics with support for interactivity and animation.

*TIFF* Tagged image file format. Recommended for storing continuous tone images.

*Vector graphics* Vector graphics store the information about the lines, colors etc as mathematical formulae rather than pixels (as in raster images). Vector images are easier to modify than raster images. EPS is an example of a vector format.

*ZIP* A ZIP file is a data compression file. It contains one or more file that can be compressed to reduce its size. Once a file has been 'ZIPped' it can be extracted again, and no data will be lost in the compression.