

Guidelines for graphical abstracts (optional)

Graphical abstracts are communications that present the major findings of a project in simple, key messages that allow the reader to take home the most important points about your project story; they have a start (e.g., the research question), a middle (how you addressed the question and the key takeaway) and an end (your conclusion).

Graphical Abstracts can be broken down into 4 basic design elements: Layout, Depiction of Time, Text Usage, and Representational Genres.¹ The layout refers to the organization of the graphical abstracts and can be linear (typically up/down or left/right) or freer in nature (centric with arrows pointing outwards). Depiction of Time conveys the temporal or sequential process in which the work was conducted. Text Usage refers to how text is incorporated into the graphical abstract by way of labels, bullet points or very short paragraphs, and annotations. Last, Representational Genres range from the iconic to the symbolic and include many options such as photographs, illustrations, models, and schematic diagrams.

Graphical Abstracts will be displayed in the article HTML display but not in the PDF or print. Graphical Abstracts are also featured in the journal's Table of Contents and social media campaigns.

The following points are tips for creating effective graphical abstracts:

DO's:

- Create an original and thought-provoking major image (other smaller icons and images can also be incorporated).
- Keep word count to a minimum and aim for 40-65 words. Be clear and concise.
- Choose a layout (e.g., up/down, left/right, or centric) that will be easy for the reader to follow the flow of information and to convey your story.
- Be sure to include a research question and a small amount of context for the topic.
- Include the "so what" as a conclusion.
- When posting the graphical abstract to a social media platform, include a live link to the article to encourage readers to access the full article.

DON'Ts:

- Graphical abstracts should never copy a figure or table from the paper.
- Avoid jargon or abbreviations. They make it hard for the reader who is less familiar with the topic to understand the findings and key messages.
- Avoid excessive detail.
- Do not include findings or citations from the existing literature.

Information to help prepare Graphical Abstracts: Authors should provide an original image that clearly represents the work described in the paper. Graphical abstracts should be submitted as a separate file for peer review in the submission system by selecting "graphical abstracts" from the drop-down list when uploading files.

- Image size: please provide an image with a minimum of 1328 x 531 pixels (w x h) using a minimum resolution of 300 dpi. If you are submitting a larger image, please use the same ratio

(500 wide x 200 high). Please note that your image will be scaled proportionally to fit in the available window on ScienceDirect: a 500 (w) by 200-pixel (h) rectangle. The use of color is encouraged.

- Font: please use Times, Arial, Courier, or Symbol with a large enough font size (12 or larger preferred) as the image will be reduced in size for the table of contents to fit a window 200 pixels high. **Lines and strokes should be between 0.5 and 1 pt.**
- File type: preferred file types are TIFF or EPS.
- No additional text, outline or synopsis should be included. Any text, label, or legend must be part of the image file. Please do not use unnecessary white space or a heading “graphical abstract” within the image file.

For examples of graphical abstracts and for more information, visit the resources listed below.

1. Hullman J, Bach B. Picturing science: Design patterns in graphical abstracts. International Conference on Theory and Application of Diagrams 2018 Jun 18 (pp. 183-200). Springer, Cham.
2. Animate your science. <https://www.animateyour.science/post/best-examples-of-graphical-abstracts#:~:text=In%20a%20nutshell%2C%20a%20graphical,and%20conclusions%2C%20complete%20with%20pictures>
3. <https://www.elsevier.com/authors/tools-and-resources/visual-abstract>