Template and style guide for authors submitting to OSA Express Journals

AUTHOR ONE,[1] AUTHOR TWO,[2,*] AND AUTHOR THREE[2,3]

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Abstract: Updated 14 June 2017. Detailed instructions and formatting guidelines for preparing *Optics Express*, *Biomedical Optics Express*, and *Optical Materials Express* manuscripts in LaTeX. For a simple outline and template, open the simple template file `Express_temp.tex`. The Express journal simple and extended templates are also available on Overleaf. OSA encourages the use of this free online collaborative tool for writing your OSA article.

OCIS codes: (000.0000) General; (000.2700) General science.

References and links

1. P. J. Harshman, T. K. Gustafson, and P. Kelley, "Title of paper," J. Chem. Phys. **3**, (to be published).
2. K. Gallo and G. Assanto, "All-optical diode based on second-harmonic generation in an asymmetric waveguide," J. Opt. Soc. Am. B **16**(2), 267–269 (1999).
3. B. R. Masters, "Three-dimensional microscopic tomographic imagings of the cataract in a human lens in vivo," Opt. Express **3**(9), 332–338 (1998).
4. D. Yelin, D. Oron, S. Thiberge, E. Moses, and Y. Silberberg, "Multiphoton plasmon-resonance microscopy," Opt. Express **11**(12), 1385–1391 (2003).
5. B. N. Behnken, G. Karunasiri, D. R. Chamberlin, P. R. Robrish, and J. Faist, "Real-time imaging using a 2.8 THz quantum cascade laser and uncooled infrared microbolometer camera," Opt. Lett. **33**(5), 440–442 (2008).

1. Introduction

Adherence to the specifications listed in this template is essential for efficient review and publication of submissions. Since OSA does not routinely perform copyediting and typesetting for this journal, use of the template is critical to providing a consistent appearance. Proper reference format is especially important (see Section 7).

2. `express.sty` and required LaTeX packages

Page layout is set with the `geometry` package for US Letter paper. `express.sty` uses the following package files:

- `geometry` (page layout)
- `color, graphicx` (replaces `graphics`; has preset options)
- `mathptmx, courier, helvet` (Times, Courier, and Helvetica fonts)

The latest versions of these standard package files can be obtained at CTAN: the Comprehensive TeX Archive Network, `http://www.ctan.org`.

The command `\usepackage{ae}` can be invoked to revert font to Computer Modern, although we prefer to publish with Times (with `mathptmx.sty`) for consistency.

3. Multiple corresponding authors

There are two options for indicating multiple corresponding authorship, and they are formatted quite differently. The first format would be as follows, still using the asterisk to denote one of the authors:

```
\author{Author One\authormark{1,3} and Author Two\authormark{2,4}}

\address{\authormark{1}Peer Review, Publications Department,
Optical Society of America, 2010 Massachusetts Avenue NW,
Washington, DC 20036, USA\\
\authormark{2}Publications Department, Optical Society of America,
2010 Massachusetts Avenue NW, Washington, DC 20036, USA\\
\authormark{3}xyz@osa.org}

\email{\authormark{*}opex@osa.org}
```

This format will generate the following appearance:

AUTHOR ONE[1,3] AND AUTHOR TWO[2,4]

[1]*Peer Review, Publications Department, Optical Society of America, 2010 Massachusetts Avenue NW, Washington, DC 20036, USA*
[2]*Publications Department, Optical Society of America, 2010 Massachusetts Avenue NW, Washington, DC 20036, USA*
[3]*xyz@osa.org*
[*]*opex@osa.org*

The second format forgoes the asterisk and sets all email addresses equally within the affiliations. Please note that this format does not use the `\email{}` field at all.

```
\author{Author One\authormark{1,3} and Author Two\authormark{2,4}}

\address{\authormark{1}Peer Review, Publications Department,
Optical Society of America, 2010 Massachusetts Avenue NW,
Washington, DC 20036, USA\\
\authormark{2}Publications Department, Optical Society of America,
2010 Massachusetts Avenue NW, Washington, DC 20036, USA\\
\authormark{3}xyz@osa.org\\
\authormark{4}opex@osa.org}
```

This format will generate the following appearance:

AUTHOR ONE[1,3] AND AUTHOR TWO[2,4]

[1]*Peer Review, Publications Department, Optical Society of America, 2010 Massachusetts Avenue NW, Washington, DC 20036, USA*
[2]*Publications Department, Optical Society of America, 2010 Massachusetts Avenue NW, Washington, DC 20036, USA*
[3]*xyz@osa.org*
[4]*opex@osa.org*

These are the preferred express journal formats for multiple corresponding authorship, and either may be used.

4. Abstract

The abstract should be limited to approximately 100 words. It should be an explicit summary of the paper that states the problem, the methods used, and the major results and conclusions. It also should contain the relevant key words that would allow it to be found in a cursory computerized search. If the work of another author is cited in the abstract, that citation should be written out without a number, (e.g., journal, volume, first page, and year in square brackets [Opt. Express **22**, 1234 (2014)]), and a separate citation should be included in the body of the text. The first reference cited in the main text must be [1]. Do not include numbers, bullets, or lists inside the abstract.

5. Figures, tables, and supplemental materials

5.1. Figures and tables

OSA express journals encourage authors to submit color figures with their manuscripts. Figures and tables should be placed in the body of the manuscript.

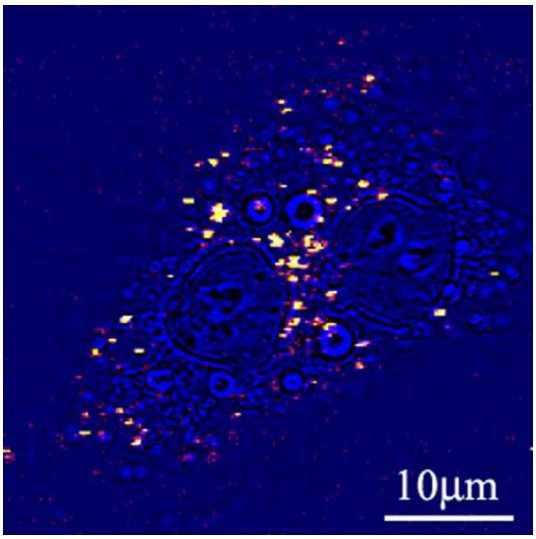

Fig. 1. Sample caption (Ref. [4], Fig. 2).

Standard LaTeX environments should be used to place tables and figures:

```
\begin{figure}[htbp]
\centering\includegraphics[width=7cm]{expressfig1}
\caption{Sample caption (\cite{Oron03}, Fig. 2).}
\end{figure}
```

5.2. Supplementary materials in OSA express journals

Most OSA journals allow authors to include supplementary materials as integral parts of a manuscript. Such materials are subject to the same editorial standards and peer review procedures along with the rest of the paper and should be uploaded and described using OSA's Prism manuscript system.

Authors can submit appropriate visualizations or small data files (see details below) for OSA to host. Large datasets and code or simulation files can be included but must be placed in an appropriate archival repository and cited as described here.

Table 1. Supplementary Materials Supported in OSA Express Journals

Visualization	2D image, 3D image, video
Data File	Small data file such as data underlying a plot in a figure
Dataset	Dataset stored in an appropriate external repository
Code	Code or simulation files stored in an appropriate external repository

Video visualizations are the most commonly submitted type of supplementary materials for the express journals. They typically illustrate a synopsis of research results. They are integral and as such should be included only when they convey essential information beyond what can be presented within the article's PDF representation. Video visualizations should be uploaded upon submission and peer-reviewed along with the manuscript. Video files must use open compression standards for display on broadly available applications such as VLC or Windows Media Player. MOV, AVI, MPG, and MP4 video containers are accepted. The following video guidelines will help with the submission process:

- 15 MB is the recommended maximum video file size.
- 720 x 480 pixels (width by height) is the recommended screen size.
- If appropriate, insert a representative frame from the video in the manuscript as a figure.
- Minimize file size by using an acceptable codec such as x264 or XviD. HandBrake is an open source tool for converting video to common codecs.
- Video files must use open compression standards for display on broadly available applications such as VLC.
- Animations must be formatted into a standard video container.

Visualizations must be associated with a figure, table, or equation OR be referenced in the results section of the manuscript. Use the label "Visualization" and the item number to identify the visualization. Please note that to create text color for supplementary materials links, use of the color.sty package and the command `\textcolor{blue}{Visualization}` is preferred to using the command `\url{Visualization}`.

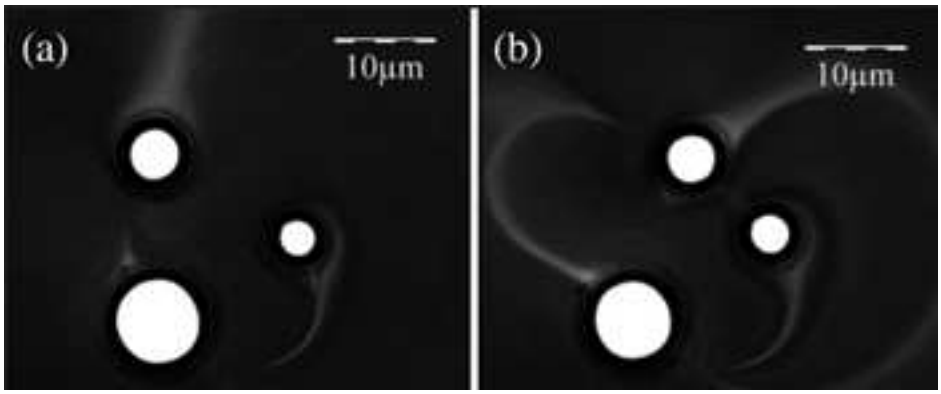

Fig. 2. Three traps create three rings of magnetic nanoparticles. The rings interact with one another (see Visualization 3). [From Masajada *et al.*, Opt. Lett. **38**, 3910 (2013)].

```
\begin{figure}[h]
\centering\includegraphics{opexfig2}
\caption{Three traps create three rings of magnetic
nanoparticles. The rings interact with one another (see
\textcolor{blue}{Visualization 3}). [From Masajada
\textit{et al.}, Opt. Lett. \textbf{38}, 3910 (2013)].}
\end{figure}
```

Please refer to the Author Guidelines for Supplementary Materials for more detailed instructions on acceptable multimedia formats for audio and tabular data.

6. Mathematical and scientific notation

6.1. Displayed equations

Displayed equations should be centered. Equation numbers should appear at the right-hand margin, in parentheses:

$$H = \frac{1}{2m}(p_x^2 + p_y^2) + \frac{1}{2}M\Omega^2(x^2 + y^2) + \omega(xp_y - yp_x). \tag{1}$$

All equations should be numbered in the order in which they appear and should be referenced from within the main text as Eq. (1), Eq. (2), and so on [or as inequality (1), etc., as appropriate].

6.2. Inline math

To help with conversion, place all math in a proper math environment. For example, expression $3 \times 4 = 12$ should be set this way, `$3\times 4=12$`, not this way, `3 $\times$4=12`. Simple fractions for inline math should use parentheses when necessary to avoid ambiguity, for example, to distinguish between $1/(n-1)$ and $1/n-1$. Exceptions to this are the proper fractions such as $\frac{1}{2}$, which are better left in this form. Summations and integrals that appear within text such as $\frac{1}{2}\sum_{n=1}^{n=\infty}(n^2-2n)^{-1}$ should have limits placed to the right of the symbol to reduce white space.

6.3. General guidelines on notation

Notation must be legible, clear, compact, and consistent with standard usage. In general, acronyms should be defined at first use. Adherence to the following guidelines will greatly assist the production process:

Radical signs. When possible, avoid oversized radical signs by using the notation of a superscript 1/2. For example, change $\sqrt{(a+b)(a-c)}$ to $[(a+b)(a-c)]^{1/2}$.

Exponentials. Avoid tiny superscripts of exponential e (e.g., e^{jkl}) by using the alternative `\exp` notation, $\exp(jkl)$.

Variables and vectors. Set single-letter variables in italics (k). Set three-vectors in boldface ($\mathbf{k}$). Functions, derivative "d," abbreviations, and multiletter identifiers should be set in roman (plain) type ($\alpha \cos$, $\int \ldots dx$, k^{out}).

Multiplication. In general, close up multiplied terms ($p_y p_x$); use $\times$ if multiplication sign is essential (2×10^{-2}) or for continuation in displayed equations. Use raised dot only for scalar product ($\mathbf{k} \cdot \mathbf{k}$).

Fences. For simple bracketing the usual order of parentheses and brackets is $\{ [(\{ [(|)] \})] \}$.

Metric system. The metric system is used in OSA journals. If nonmetric units are essential (e.g., for parts specifications), conversion should be given at first mention: ". . . a $\frac{1}{4}$-in. bolt (1 in. = 2.54 cm)."

Funding

Please identify all appropriate funding sources by name and contract number. Funding information should be listed in a separate block preceding any acknowledgments. List only the funding agencies and any associated grants or project numbers, as shown in the example below:

National Science Foundation (NSF) (1253236, 0868895, 1222301); Program 973 (2014AA014402); Natural National Science Foundation (NSFC) (123456).

OSA participates in Crossref's Funding Data, a service that provides a standard way to report funding sources for published scholarly research. To ensure consistency, please enter any funding agencies and contract numbers from the Funding section in Prism during submission or revisions.

Acknowledgments

Acknowledgments, if included, should appear at the end of the document. The section title should not follow the numbering scheme of the paper.

Disclosures

For *Biomedical Optics Express* submissions only, disclosures should be listed in a separate nonnumbered section at the end of the manuscript. List the Disclosures codes identified on OSA's Conflict of Interest policy page, as shown in the examples below:

ABC: 123 Corporation (I,E,P), DEF: 456 Corporation (R,S). GHI: 789 Corporation (C).

If there are no disclosures, then list "The authors declare that there are no conflicts of interest related to this article."

7. References

Proper formatting of references is extremely important, not only for consistent appearance but also for accurate electronic tagging. Please follow the guidelines provided below on formatting, callouts, and use of BibTeX.

7.1. Formatting reference items

Each source must have its own reference number. Footnotes (notes at the bottom of text pages) are not used in OSA journals. References require all author names, full titles, and inclusive pagination. Here are some examples of how to set the most common reference types:

Journal paper

Do not include web addresses in journal citations.

C. van Trigt, "Visual system-response functions and estimating reflectance," J. Opt. Soc. Am. A **14**(4), 741–755 (1997).

S. Yerolatsitis, I. Gris-Sánchez, and T. A. Birks, "Adiabatically-tapered fiber mode multiplexers," Opt. Express **22**(1), 608–617 (2014).

Journal paper identified by paper number

The paper number is sufficient. There is no need to give the number of pages.

L. Rippe, B. Julsgaard, A. Walther, Y. Ying, and S. Kröll, "Experimental quantum-state tomography of a solid-state qubit," Phys. Rev. A **77**, 022307 (2008).

Book

T. Masters, *Practical Neural Network Recipes in C++* (Academic, 1993).

F. Ladouceur and J. D. Love, *Silica-Based Buried Channel Waveguides and Devices* (Chapman & Hall, 1995), Chap. 8.

Article in a book

D. F. Edwards, "Silicon (Si)," in *Handbook of Optical Constants of Solids,* E. D. Palik, ed. (Academic, 1985).

Paper in a published conference proceedings

R. E. Kalman, "Algebraic aspects of the generalized inverse of a rectangular matrix," in *Proceedings of Advanced Seminar on Generalized Inverse and Applications,* M. Z. Nashed, ed. (Academic, 1976), pp. 111–124.

Paper published in an OSA conference proceedings

R. Craig and B. Gignac, "High-power 980-nm pump lasers," in *Optical Fiber Communication Conference*, Vol. 2 of 1996 OSA Technical Digest Series (Optical Society of America, 1996), paper ThG1.

Paper presented at a meeting/from an unpublished conference proceeding

D. Steup and J. Weinzierl, "Resonant THz-meshes," presented at the Fourth International Workshop on THz Electronics, Erlangen-Tennenlohe, Germany, 5–6 Sept. 1996.

SPIE proceedings

S. K. Griebel, M. Richardson, K. E. Devenport, and H. S. Hinton, "Experimental performance of an ATM-based buffered hyperplane CMOS-SEED smart pixel array," Proc. SPIE **3005**, 254–256 (1997).

For later SPIE proceedings with a paper number, cite just the number and not any page information.

S. Gu, F. Shao, G. Jiang, F. Li, and M. Yu, “An objective visibility threshold measurement method for asymmetric stereoscopic images,” Proc. SPIE **8205**, 820505 (2011).

IEEE proceedings

T. Darrel and K. Wohn, “Pyramid based depth from focus,” in *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition* (IEEE, 1988), pp. 504–509.

Paper accepted for publication

D. Piao, “Cancelation of coherent artifacts in optical coherence tomography imaging,” Appl. Opt. (to be published).

D. W. Diehl and T. D. Visser, "Phase singularities of the longitudinal field components in the focal region of a high-aperture optical system," J. Opt. Soc. Am. A, doc. ID 56789 (posted 11 November 2005, in press).

Manuscript in preparation

J. Q. Smith, Laboratory for Laser Energetics, University of Rochester, 250 East River Road, Rochester, New York 14623, USA, and K. Marshall are preparing a manuscript to be called “Optical aspects in liquid crystals.”

Personal communication

T. Miller, Publications Department, Optical Society of America, 2010 Massachusetts Avenue, N.W., Washington, D.C., 20036 (personal communication, 2010).

Internet links

Extreme Networks white paper, “Virtual metropolitan area networks,” (Extreme Networks, 2001), `http://www.extremenetworks.com/technology/whitepapers/vMAN.asp`.

A. G. Ramm, “Invisible obstacles,” `http://www.arxiv.org/abs/math-ph/0608034`.

The commands `\begin{thebibliography}{}` and `\end{thebibliography}` format the section according to standard style, showing the title **References and links**. Use the `\bibitem{label}` command to start each reference.

7.2. Formatting reference citations

References should be numbered consecutively in the order in which they are referenced in the body of the paper. Set reference callouts with standard `\cite{}` command or set manually inside square brackets [1].

To reference multiple articles at once, simply use the cite command with a comma separating the reference labels, e.g. `\cite{gallo99,Masters98a,Oron03}`, produces [2–4]. Using the `cite.sty` package will make these citations appear like so: [2–4].

7.3. BibTEX

BibTEX may be used to create a file containing the references, whose contents (i.e., contents of `.bbl` file) can then be pasted into the bibliography section of the `.tex` file. A new BibTEX style file, `osajnl.bst`, is provided.

To assist authors with journal abbreviations in references, standard abbreviations for some commonly cited journals have been included as macros within opex3.sty. The abbreviations are shown in Table 2 below.

Table 2. Standard abbreviations for commonly cited journals.

Macro	Abbreviation	Macro	Abbreviation
\ao	Appl. Opt.	\jpp	J. Phys.
\aop	Adv. Opt. Photon.	\nat	Nature
\ap	Appl. Phys.	\oc	Opt. Commun.
\apl	Appl. Phys. Lett.	\opex	Opt. Express
\apj	Astrophys. J.	\ol	Opt. Lett.
\bell	Bell Syst. Tech. J.	\ome	Opt. Mater. Express
\boe	Biomed. Opt. Express	\opn	Opt. Photon. News
\jqe	IEEE J. Quantum Electron.	\pl	Phys. Lett.
\assp	IEEE Trans. Acoust. Speech Signal Process.	\pr	Photon. Res.
\aprop	IEEE Trans. Antennas Propag.	\pra	Phys. Rev. A
\mtt	IEEE Trans. Microwave Theory Tech.	\prb	Phys. Rev. B
\iovs	Invest. Ophthalmol. Vis. Sci.	\prc	Phys. Rev. C
\jcp	J. Chem. Phys.	\prd	Phys. Rev. D
\jmo	J. Mod. Opt.	\pre	Phys. Rev. E
\jocn	J. Opt. Commun. Netw.	\prl	Phys. Rev. Lett.
\jon	J. Opt. Netw.	\rmp	Rev. Mod. Phys.
\josa	J. Opt. Soc. Am.	\pspie	Proc. Soc. Photo-Opt. Instrum. Eng.
\josaa	J. Opt. Soc. Am. A	\sjqe	Sov. J. Quantum Electron.
\josab	J. Opt. Soc. Am. B	\vr	Vision Res.

8. Conclusion

After proofreading the manuscript, compress your .TEX manuscript file and all figures (which should be in EPS format, or PDF format if you are using PDF-LaTeX) in a ZIP, TAR or TAR-GZIP package. Prism, OSA's article tracking system, will process in LaTeXmode by default but will use PDF-LaTeXif PDF figure files are detected. Note: TAR or TAR-GZIP is no longer required. All files must be referenced at the root level (e.g., file `figure-1.eps`, not `/myfigs/figure-1.eps`). If there is video or other supplementary materials, the associated files should be uploaded separately.