Letter Optica 1

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#### 1. INTRODUCTION

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# 2. EXAMPLES OF ARTICLE COMPONENTS

The sections below show examples of different article components.

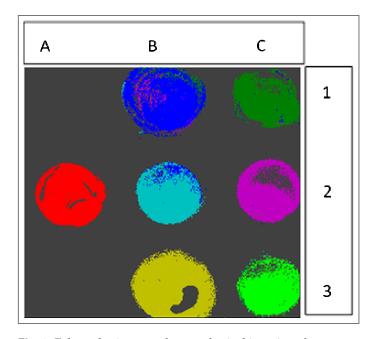
# 3. FIGURES AND TABLES

It is not necessary to place figures and tables at the back of the manuscript. Figures and tables should be sized as they are to appear in the final article. Do not include a separate list of figure captions and table titles.

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#### A. Sample Figure

Figure 1 shows an example figure.



**Fig. 1.** False-color image, where each pixel is assigned to one of seven reference spectra.

#### B. Sample Table

Table 1 shows an example table.

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Letter Optica 2

Table 1. Shape Functions for Quadratic Line Elements

| local node | $\{N\}_m$       | $\{\Phi_i\}_m\ (i=x,y,z)$ |
|------------|-----------------|---------------------------|
| m = 1      | $L_1(2L_1-1)$   | $\Phi_{i1}$               |
| m = 2      | $L_2(2L_2-1)$   | $\Phi_{i2}$               |
| m = 3      | $L_3 = 4L_1L_2$ | $\Phi_{i3}$               |

## 4. SAMPLE EQUATION

Let  $X_1, X_2, ..., X_n$  be a sequence of independent and identically distributed random variables with  $E[X_i] = \mu$  and  $Var[X_i] = \sigma^2 < \infty$ , and let

$$S_n = \frac{X_1 + X_2 + \dots + X_n}{n} = \frac{1}{n} \sum_{i=1}^{n} X_i$$
 (1)

denote their mean. Then as n approaches infinity, the random variables  $\sqrt{n}(S_n - \mu)$  converge in distribution to a normal  $\mathcal{N}(0, \sigma^2)$ .

## 5. SAMPLE ALGORITHM

Algorithms can be included using the commands as shown in algorithm 1.

#### Algorithm 1. Euclid's algorithm

| 1: <b>procedure</b> EUCLID( <i>a</i> , <i>b</i> ) |   |
|---|---|
| $r \leftarrow a \bmod b$                          | 2:  |
| : while $r \neq 0$ do                             | 3:  |
| : $a \leftarrow b$                                | 4:  |
| $b \leftarrow r$                                  | 5:  |
| $: r \leftarrow a \bmod b$                        | 6:  |
| return b  | 7:  |
|   | $r \leftarrow a \mod b$ <b>while</b> $r \neq 0$ <b>do</b> $a \leftarrow b$ $b \leftarrow r$ $r \leftarrow a \mod b$ |

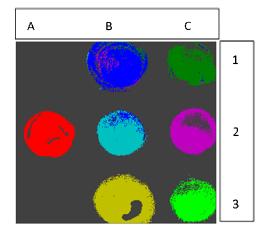
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Authors may also include Supplemental Documents (PDF documents with expanded descriptions or methods) with the primary manuscript. At this time, supplemental PDF files are not accepted for partner titles, JOCN and Photonics Research. To reference the supplementary document, the statement "See Supplement 1 for supporting content." should appear at the bottom of the manuscript (above the References heading). Please note that to create text color for supplementary materials links, use of the command

\textcolor{urlblue}{Visualization 1} is preferred to using
the command

\url{Visualization 1}.



**Fig. 2.** (a) Three traps create three rings of magnetic nanoparticles. (b) The rings interact with one another.

# **B. Sample Dataset Citation**

1. M. Partridge, "Spectra evolution during coating," figshare (2014) [retrieved 13 May 2015], http://dx.doi.org/10.6084/m9.figshare.1004612.

#### C. Sample Code Citation

2. C. Rivers, "Epipy: Python tools for epidemiology" (Figshare, 2014) [retrieved 13 May 2015], http://dx.doi.org/10.6084/m9.figshare.1005064.

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3

#### 9. REFERENCES

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## **REFERENCES**

- Y. Zhang, S. Qiao, L. Sun, Q. W. Shi, W. Huang, L. Li, and Z. Yang, "Photoinduced active terahertz metamaterials with nanostructured vanadium dioxide film deposited by sol-gel method," Opt. Express 22, 11070–11078 (2014).
- 2. Optical Society, "OSA Publishing," http://www.osapublishing.org.
- P. Forster, V. Ramaswamy, P. Artaxo, T. Bernsten, R. Betts, D. Fahey, J. Haywood, J. Lean, D. Lowe, G. Myhre, J. Nganga, R. Prinn, G. Raga, M. Schulz, and R. V. Dorland, "Changes in atmospheric consituents and in radiative forcing," in Climate Change 2007: The Physical Science Basis. Contribution of Working Group 1 to the Fourth assessment report of Intergovernmental Panel on Climate Change, S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor, and H. L. Miler, eds. (Cambridge University Press, 2007).
- R. McKay, "X-ray crystallography," Ph.D. thesis, Princeton University (1982).
- V. S. C. Manga Rao and S. Hughes, "Single quantum-dot Purcell factor and β factor in a photonic crystal waveguide," Phys. Rev. B 75 (2007).