

The Mission/Vision Statement of SPIE, the International Society for Optics and Photonics, states that SPIE partners with researchers, educators, and industry to advance light-based research and technologies for the betterment of the human condition. It is the purpose of this statement to advance this vision by presenting ethical guidelines for society members, collaborators, and participants to abide by in their professional lives.

### Professional Behavior

1. Individuals agree to abide by the SPIE Anti-Harassment Policy and SPIE Code of Conduct.
2. Real and perceived conflicts of interest should be avoided and disclosed to all affected parties when it cannot be avoided.
3. Public statements should be realistic and issued in an objective and truthful manner based on available data.
4. Professional confidentiality should be maintained.
5. Accomplishments, publications, and professional honors and titles should be accurately reported.

### Research Results

The results of research should be recorded and maintained in a form that allows analysis and review. Research data should be immediately available to scientific collaborators. Following publication, the data should be retained for a reasonable period in order to be available promptly and completely for appropriate scientific review. Exceptions may be appropriate in certain circumstances in order to preserve privacy, to ensure patent protection, or for similar reasons.

Fabrication of data, tampering with data, or selective reporting of data with the intent to mislead or deceive is an egregious departure from the expected norms of scientific conduct, as is the theft of data or research results from others.

### Publication Practices

Editors (including guest editors), authors, and reviewers must work together to ensure the integrity and quality of the published record. Each has a different, though connected, role in the process, and the guidelines below augment and reinforce the *SPIE Code of Conduct*.

### Editorial process

The Editor is responsible for the content of the journal. Submissions outside the aims and scope of the journal should be redirected or rejected. Editors should be aware of the policies and practices of the journal to ensure fair and consistent editorial decisions.

Editor conflicts of interest should be identified on submission. Editors should not oversee the peer review of their own submissions, submissions from close collaborators or those with whom they have close personal ties, or those where they have a financial interest.

### Authorship

Authorship should be limited to those who have made a significant contribution to the concept, design, execution, or interpretation of the research study. All those who have made significant contributions should be offered the opportunity to be listed as authors. Other individuals who have contributed to the study should be acknowledged, but not identified as authors.

Authorship, including order, should be discussed and agreed upon, preferably in writing, prior to submission, and revisited throughout the peer-review process. Authorship disputes cannot be adjudicated by the journal or its editors and will therefore be the responsibility of the authors or the authors' institution(s) to resolve.

All collaborators share responsibility for any paper they coauthor. All authors share responsibility for the paper as an accurate, verifiable report of the research. These include coauthors who are accountable for the integrity of the critical data reported in the paper, carry out the analysis, write the manuscript, present major findings at conferences, and/or provide scientific leadership for junior colleagues.

While coauthors may not be familiar with all aspects of the research presented in the paper, all collaborations should have in place an appropriate process for reviewing and ensuring the accuracy and validity of the reported results, and all coauthors should be aware of this process and responsible for the paper's integrity.

It should be recognized that honest error is an integral part of the scientific enterprise. It is not unethical to be wrong, provided that errors are promptly acknowledged and corrected when they are detected. All coauthors must review the manuscript before its submission. All coauthors have an obligation to provide prompt retractions or correction of errors in published works. An individual unwilling or unable to accept appropriate responsibility for a paper should not be a coauthor.

Because authorship attribution requires accountability for the submitted work, SPIE does not allow ChatGPT and other Large Language Models (LLMs) to be listed as an author on a manuscript. If authors use AI tools when writing a manuscript, they must be disclosed along with all other tools used in the study. AI tools used in such methodologies as data collection and figure creation should be disclosed in the Materials and Methods section of the paper. Use for language and grammar clean-up should be disclosed in the Acknowledgments. The disclosure should describe which AI tool was used, how it was used, and the prompts that were used. SPIE follows the [guidance of COPE](#) on this topic, which further advises that "Authors are fully responsible for the content of their manuscript, even those parts produced by an AI tool, and are thus liable for any breach of publication ethics."

Collaborations are expected to have a process to archive and verify the research record; to facilitate internal communication and allow all authors to be fully aware of the entire work; to respond to questions concerning the joint work and to enable other responsible scientists to share the data. All members of a collaboration should be familiar with, and understand, the process.

### Peer Review

Peer review is the cornerstone of scholarly publishing, ensuring the accuracy and credibility of academic work by subjecting it to the scrutiny of experts in the field. It is a critical process that upholds the quality and integrity of research.

Peer review can serve its intended function only if the members of the scientific community are prepared to provide thorough, fair, and objective evaluations based on requisite expertise. Although peer review can be difficult and time-consuming, scientists have an obligation to participate in the process.

Privileged information or ideas that are obtained through peer review must be kept confidential and not used for competitive gain.

Reviewers should disclose conflicts of interest resulting from direct competitive, collaborative, or other relationships with any of the authors, and avoid cases in which such conflicts preclude an objective evaluation.

### Ethical Violations in Peer Review

*Publication rings* are arrangements between individuals or groups where papers are accepted for publication without appropriate peer review. This is done to artificially inflate the publication output for the parties involved.

*Coercive review* is when reviewers or editors seek financial or other advantages from authors to ensure positive reviews.

*Coercive citations* are when reviewers or editors request citations to their own work to ensure acceptance for publication. These citations are generally tangential to the work and do not serve to improve the paper. Of course, citation requests can be appropriate when the work under review does not adequately communicate precedents or inadequately communicates the context of the work.

*Undisclosed AI tools:* Because web-based large language models (LLMs), including ChatGPT, Microsoft Copilot, Google Gemini, etc., log the prompts they are provided, most uses of these tools in peer review breach confidentiality, which is a violation of the peer-review process. The following examples attempt to clarify acceptable and unacceptable uses of LLMs in the peer-review process.

Prohibited uses include:

- Uploading the manuscript to a web-based LLM for any reason; and
- Uploading the reviewer's comments, or any drafts or portions thereof, to a web-based LLM for any reason.

Acceptable uses may include:

- Asking the LLM to summarize the state of the art in a specific subject area to provide

background for the reviewer.

- Enterprise or local versions of LLMs (not web-based) that do not save or store input prompts may be used for grammatical and stylistic assistance. Note that if an LLM is used in a review in any way, the reviewer must disclose its use to the Editor in the “Private Comments to Editor” box on the review form.

SPIE recognizes that LLMs are changing rapidly, along with acceptable uses, and will adapt this policy as needed in the future.

### **Conflict of Interest**

Conflicts of interest include relationships, affiliations, and financial interests pertinent to the research presented in a manuscript. Potential conflicts of interest may include employment, ownership of stock or stock options, patents, honoraria, grants, royalties, consultancies, donations, and other types of funding. Even the appearance of a conflict can constitute a breach of ethical publishing, and therefore situations and activities that may be perceived as conflicts should be reported.

### **Definitions**

The following terms represent different forms of unethical publication practices and violate SPIE policy. All of them are serious breaches of professional conduct, with potentially severe ethical and legal consequences.

#### *Plagiarism*

The reuse of someone else's prior ideas, processes, results, or words without explicit attribution of the original author and source. Unauthorized use of another researcher's unpublished data or findings without permission is considered to be a form of plagiarism even if the source is attributed.

#### *Self-plagiarism*

Reproducing one's own work with the intent to deceive editors, reviewers, and readers into thinking that they are new.

#### *Ghost authorship*

When a person who makes substantial contribution to a work and fulfills the requirements of authorship is left off the byline.

#### *Gift or guest authorship*

When a person who made no or minimal contributions to a work is included in the byline. This is done to influence the peer-review process (association of stature) or due to financial or coercive pressures.

#### *Gift affiliations*

When institutions offer inducements to be included as secondary affiliations even when no work or obligations are expected of the author. This practice intends to elevate the institution's publication output to increase prestige.

### *Excessive self-citations*

When self-citations are tangential to the work or distort the state of the field, and/or they are used to elevate the prestige of the author.

### *Citation rings*

Arrangements between individuals or groups where they reference each other's papers whether or not they are relevant to the current work.

### *Duplicate submission*

When concurrent submissions of a paper are made to more than one peer-reviewed journal or conference proceedings volume.

### *Duplicate publication*

Publication of a verbatim or essentially similar paper in more than one peer-reviewed journal or conference proceeding volume.

### *Fabrication or misrepresentation of data or results*

When data is falsified, manipulated, or selectively reported with the intent to mislead or deceive, including the theft of data or research results from others.

## **INQUIRY AND INVESTIGATION**

### **Discovering possible misconduct**

There are several ways that SPIE may learn about incidences of possible publishing misconduct, before or after publication of a work, including discovery as part of the publication review process, receipt of a direct communication alleging publication misconduct, or discovery in the course of internal review and preparation. Readers or authors who report allegations of misconduct should provide as much detail as possible, including copies of papers or documentation, known background information, etc. Allegations must be made directly to SPIE. Anonymous allegations will be considered, however unsubstantiated or frivolous ones will not.

### **Basic principles**

If the editor and/or staff of an SPIE publication learns that an author, reviewer, or editor, including guest editors, may have acted improperly, which may include but is not limited to any of the circumstances defined above, then the editor and/or staff shall initiate an investigation of the alleged misconduct.

- All inquiries will be handled promptly and fairly.
- All parties connected to the allegation will be given the opportunity to respond.
- Appropriate confidentiality will be maintained.

### **SPIE Publication Ethics Subcommittee**

The SPIE Publications Ethics Subcommittee is responsible for developing and monitoring policies and

guidelines related to publishing ethics, advising Editors and staff in matters pertaining to possible violations, and assisting with investigations of alleged violations.

### **Investigating/Enforcing body**

The body responsible for investigating/enforcing publishing misconduct may be the Editor of the journal or conference proceedings, the SPIE Publication Ethics Subcommittee, the Chair of the SPIE Publications Committee, the SPIE CEO, the SPIE Director of Publications, or any combination of the above, depending on the publication(s) involved and the nature of the allegation. SPIE will determine the appropriate investigating/enforcing body.

### **Investigative process**

The investigative process depends on the type of allegation and how it is discovered.

Various information gathering and review steps may be taken, such as appointment of an independent review committee. In such cases it may be necessary to disclose specific details of the matter to other parties. In all cases, every effort will be made to keep details of the investigation confidential to those involved and those with a need to know.

In all cases, the concerned parties will be informed of the allegation and be given an opportunity to respond within 14 days of the notice. If no response is received within that time, a decision may be rendered based on known information. Additional steps may be taken at the discretion of the investigating/enforcing body.

The following sections give general guidelines related to an investigation of each type of misconduct defined above. Each case is unique and therefore may require a unique approach, as determined by the investigating/enforcing body.

*Plagiarism:* SPIE screens submissions for plagiarism using the iThenticate software solution. Plagiarism may be discovered by an author or researcher whose work has been plagiarized or published without consent, by a third party who is familiar with a prior work such as a reviewer or a reader, or by an editor or SPIE staff member. In cases alleging plagiarism, the investigating/enforcing body will obtain source documents and testimony and determine the validity of the allegation and extent of plagiarism. There are varying degrees of plagiarism warranting different consequences and corrective action, listed below from most to least serious:

1. Verbatim or nearly verbatim copying or translation of a full paper(s), or the verbatim or nearly verbatim copying or translation of a significant portion(s) of another paper(s).
2. Disclosing unpublished data or findings without permission, even if attributed.
3. Uncredited verbatim or nearly verbatim copying or translation of individual elements of another paper(s).
4. Uncredited paraphrasing of pages or paragraphs from another paper(s).
5. Credited verbatim copying or translation of a major portion of a paper without clear delineation (e.g., quotes or indents)

The degree of corrective action will be commensurate with the degree of plagiarism.

*Disputes about authorship:* The investigating/enforcing body will encourage the concerned parties to resolve the dispute themselves. If the matter is not resolved in this way, the investigating/enforcing body will evaluate the claim to determine whether the matter is within or outside SPIE's purview and to determine an appropriate course of inquiry and investigative action.

*Duplicate submission:* If duplicate submission to a peer-reviewed journal is suspected or discovered at any time between submission and publication of a paper, the investigating/enforcing body will attempt to contact the other publication(s) to which the paper has been submitted or published to verify the occurrence of duplicate submission and to inform the editor of the other journal(s). If duplicate submission is confirmed, the paper will be immediately rejected. Additional sanctions may be warranted. An attempt will be made to coordinate corrective actions with the editor(s) of the other publication(s).

*Duplicate publication:* If duplicate publication in peer-reviewed journals or conference proceedings volumes is suspected, the investigating/enforcing body will confirm this by assessing the similarity and determining the paper's publication history. An attempt will be made to coordinate corrective actions with the editor(s) of the other publication(s). Prior publication or preliminary publication in a conference proceedings or similar publication or research report is allowed by SPIE provided that information is disclosed to the journal editor and the submission complies with SPIE copyright and journal submission policies.

*Fabrication or misrepresentation of data or results:* Investigations of this type of alleged or suspected misconduct require significant expertise and due diligence and also may have serious legal implications in addition to scientific implications. The investigation may involve the SPIE President and Executive Committee and may result in legal action.

### Consequences and Corrective Actions

If a finding of misconduct is determined, SPIE shall initiate corrective and/or disciplinary actions. The investigating/enforcing body will notify the individual(s) that corrective and/or disciplinary actions are being reviewed by SPIE. The named individual(s) shall be given the opportunity to respond within 30 days to the recommended corrective and/or disciplinary actions.

There are several possible corrective and/or disciplinary actions. Depending on the degree of misconduct, one or all may be applied:

- Notice of violation in the appropriate publication.
- Publication of an erratum.
- Retraction of a published paper from the SPIE Digital Library with notice of reason.
- Rejection and return of papers in review and publication queues.
- Prohibition from publishing in the specific publication or any SPIE publication for a period of time commensurate with the severity of misconduct and prior history of the author(s).
- Prohibition from other forms of participation with SPIE.
- Repeat offenders subject to increased penalty.
- Revocation of SPIE-bestowed status and honors.

No later than 90 days after notifying the individual(s) named in the recommendation, SPIE will issue a final determination of corrective and/or disciplinary action(s) to be taken. Disciplinary actions may include reporting offenders to their institutions.

### **Use of Human Participants and Animals**

SPIE expects journal authors to observe internationally accepted principles and practices related to the ethical conduct of research involving the use of human participants or animals. A brief statement must be included in the manuscript identifying the institutional oversight or licensing body that approved the studies. For studies involving human participants, a statement must also be included confirming that informed consent was either obtained from all subjects or this requirement was waived by the oversight body.

### **Committee on Publication Ethics (COPE)**

SPIE is a member of the Committee on Publication Ethics (COPE).

About COPE (<https://publicationethics.org/about>): “COPE is committed to educate and support editors, publishers and those involved in publication ethics with the aim of moving the culture of publishing towards one where ethical practices becomes the norm, part of the publishing culture. Our approach is firmly in the direction of influencing through education, resources and support of our members alongside the fostering of professional debate in the wider community.”

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*SPIE acknowledges IEEE and the American Physical Society (APS) for permission to use portions of their ethics and plagiarism guidelines in this document.*