## INFORMATION FOR AUTHORS

IEEE Journal of Photovoltaics (*J-PV*) is a peer-reviewed, archival publication reporting original and significant research results that advance the field of photovoltaics. PV is diverse in its science base ranging from semiconductor and PV device physics to optics and the materials sciences. The journal publishes articles that connect this science base to PV science and technology. The intent is to publish original research results that are of primary interest to the photovoltaic specialist.

The scope of the *J-PV* incorporates: fundamentals and new concepts of PV conversion, including those based on nanostructured materials, low-dimensional physics, multiple charge generation, up/down converters, thermophotovoltaics, hot-carrier effects, plasmonics, metamorphic materials, luminescent concentrators, and rectennas; Si-based PV, including new cell designs, crystalline and non-crystalline Si, passivation, characterization and Si crystal growth; polycrystalline, amorphous and crystalline thin-fi lm solar cell materials, including PV structures and solar cells based on II-VI, chalcopyrite, Si and other thin fi lm absorbers; III-V PV materials, heterostructures, multijunction devices and concentrator PV; optics for light trapping, reflection control and concentration; organic PV including polymer, hybrid and dye sensitized solar cells; space PV including cell materials and PV devices, defects and reliability, environmental effects and protective materials; PV modeling and characterization methods; and other aspects of PV, including modules, power conditioning, inverters, balance-of-systems components, monitoring, analyses and simulations, and supporting PV module standards and measurements. Tutorials and review papers on these subjects are also published and occasionally special issues are published to treat particular areas in more depth and breadth.

Submission of a manuscript amounts to the assurance that it has received proper clearance from all authors listed, from the authors' companies or institutions, that it has not been copyrighted, published, or accepted for archival publication elsewhere while under consideration by the IEEE Journal of Photovoltaics. In cases where there is even a potential for significant overlap between the manuscript and previous work, it is the responsibility of the author(s) to provide references to pertinent previous publication and copies/preprints of manuscripts undergoing pre-publication review elsewhere. Failure to do so will compromise the peer review process and render such papers ineligible for publication.

**Pre-submission Editorial Services:** It is the authors' responsibility to prepare a publication-quality manuscript. Manuscripts with improper use of language, symbols, or units may not be sent out for review to conserve limited volunteer reviewer resources needed to evaluate the technical merits of a submission. English language editing services can help refine the language of your article and reduce the risk of rejection without review. IEEE authors are eligible for a 10% discount at American Journal Experts; visit <a href="http://www.aje.com/go/ieee/">http://www.aje.com/go/ieee/</a> to learn more. Please note these services are fee-based and do not guarantee acceptance.

**Plagiarism:** All submissions will be checked for originality using the plagiarism detection software <a href="CrossCheck">CrossCheck</a>. Manuscripts that are found to have plagiarized others; copying someone else's work without appropriate credit, that contain a significant crossover with another manuscript by the same authors or other author(s); copying or reusing of one's own prior work without appropriate citation, or that do not specifically cite prior work, are subject to penalty under the IEEE policies governing publications. For more information on these policies please visit: <a href="https://origin.www.ieee.org/documents/opsmanual.pdf">https://origin.www.ieee.org/documents/opsmanual.pdf</a>.

Submission Procedure: All manuscripts must be submitted electronically using IEEE's web based Author Submission and Peer Review System, ScholarOne Manuscripts. Please do not send manuscripts directly to the Editor-in-Chief or the Publications Office. Manuscripts must be uploaded to the *J-PV* web site at <a href="http://mc.manuscriptcentral.com/jpv">http://mc.manuscriptcentral.com/jpv</a>. A user account is required to submit a manuscript, before creating a new account please check to ensure that you do not have an existing account which is based on your e-mail address. Instructions for establishing an author's account and for uploading your paper are available on the submission web site. Once the list and order of authors has been established, it should not be altered without permission of all living authors. If an author is added or removed from any paper, a signed acknowledgement by all authors, stating that they are aware of and agree to the change, must be submitted to the editorial office. This includes new authors as well as authors no longer on the byline.

A cover letter stating explicitly that the manuscript is being submitted for publication in the Journal of Photovoltaics must accompany the manuscript. The author should indicate which category in the Table of Contents would be most suitable for the paper. These categories are: Fundamentals and New Concepts, Organic PV, Crystalline Silicon PV, Amorphous, Nanostructured, and Film Si PV, Thin Film PV, III-V and Concentrator PV, Space PV, PV Characterization, and PV Systems.

**Supplementary Material**: Supplementary data is not permitted and will not be included in the review process. Any supplementary files submitted will be removed by the editorial administrator.

**Submission Requirement**: All IEEE journals require an Open Researcher and Contributor ID (ORCID) for all authors. ORCID is a persistent unique identifier for researchers and functions similarly to an article's Digital Object Identifier (DOI). ORCIDs enable accurate attribution and improved discoverability of an author's published work. The author will need a registered ORCID in order to submit a manuscript or review a proof in this journal.

**Submission Format:** Manuscripts must be submitted in the two column format using the IEEE Template. The font sizes and line spacing must not be altered when using this template. The template and further guidelines on the preparation of manuscripts can be obtained from the IEEE Tools for Authors website located at http://www.ieee.org/web/publications/authors/transjnl/index.html. In addition, guidelines on how to write for technical periodicals can be found at <a href="http://www.ieee.org/">http://www.ieee.org/</a> publications standards/publications/authors/author guide interactive.pdf.

**Manuscript Length:** The standard length of an initial manuscript submission (including references and bios/photos) for regular papers should not exceed six pages. Papers over six pages will be considered, but will have a lower probability of acceptance.

**Abstract**: The abstract must be a concise yet comprehensive reflection of what is in your article. In particular, the abstract must state the original research contribution and supported by key findings. It should also be: 1) Self-contained, without abbreviations, footnotes, or references; it should be a microcosm of the full article; 2) Between 150-250 words. Be sure that you adhere to these limits; otherwise, you will need to edit your abstract accordingly. 3) Written as one paragraph, and should not contain displayed mathematical equations or tabular material. 4) Should include three or four different keywords or phrases, as this will help readers to find it. It is important to avoid over-repetition of such phrases as this can result in a page being rejected by search engines. 5) Ensure that your abstract reads well and is grammatically correct.

**Briefs:** Are short reports of preliminary results on completed work that are of current interest to many workers in the field. The standard length of a Brief is 3 published pages excluding references, bios and photos.

**Correspondence:** Brief items that describe a use for or magnify the meaning of a single technical point, includes suggestions for new work, errata, and comments on material previously published in the Journal.

**Review Papers:** The purpose of a review paper is to succinctly review progress in a particular topic. Overall, the paper summarizes the current state of knowledge of the topic. It creates an understanding of the topic for the reader by discussing the findings presented in research papers. A review paper synthesizes the results from several primary literature papers to produce a coherent argument about a topic or focused description of a field. A large focus should be a description of the data, and the experimental techniques used to generate it, that support or refute a point of view. A good review paper should educate a technically trained reader who is not an expert on the topic on the current understanding of the subject, including key experimental results, competing theories, unanswered questions and areas for further investigation.

It is not a place for presenting new data, although new insights taken from published data are welcomed. It is not a place for one investigator to showcase only his/her own work. The standard length of a review paper is twelve to sixteen pages.

**Guidelines for Submission of an Enhanced Manuscript:** This guideline is for submitting a *J-PV* manuscript that has been published, in part, in another IEEE venue, typically in a conference proceedings. The submission process is simple. The enhanced manuscript can be submitted via the online system ScholarOne Manuscripts at: <a href="http://mc.manuscriptcentral.com/jpv">http://mc.manuscriptcentral.com/jpv</a>.

Since IEEE holds copyright to your initial paper (e.g. proceedings), no reprint permissions are required. IEEE publications policy has two relevant requirements for publishing enhancements of papers to ensure clarity in the literature. First, the initial paper must be cited in the enhanced version. Second, the author(s) must explain in the introduction specifically how the initial paper has been enhanced. It is anticipated that at least a third of the enhanced manuscripts contain relevant material that was not in the initial paper. This is not meant to be a rigid quantitative requirement but rather a guideline for editors and reviewers. There is no deadline for submitting an enhanced manuscript.

Suggestions for Manuscript Enhancement: The following comments are only pointers and not intended to be comprehensive, but should improve the likelihood that an editor will recommend a conference paper for publication. The most obvious enhancement is that new results have been generated, for example, by additional experiments or modeling. Furthermore, the interpretation of the results may also be expanded. Questions posed by conference attendees at the time of presentation can often give clues to weaknesses in the presentation, pointing out areas of ambiguity, critical gaps in the data, or questionable conclusions. It may also be appropriate to expand the discussion portion to explain subtleties or clarify the domain of validity of the conclusions. Other areas for enhancement include providing a more complete list of references and expanding the introduction to explain better why the study was needed or why a particular model was chosen to simulate an application. Figure labels and

captions may be able to be improved, or new figures may be necessary to better illustrate a point. Removing redundant figures may also be useful. Details of an experimental setup, including sample preparation, equipment used and measurement method may have been missed. However, methods and equipment that are not unique should be referenced only. Authors may find these useful as pointers to areas that need additional attention.

**References:** Each reference cited must have a complete list of authors (no *et al.*), complete titles, first and last page numbers, month and year. In addition, authors are required to include the Digital Object Identifier (DOI), where available. Supporting documentation for cited references not yet published should be provided.

**Model Validation:** *J-PV* publishes manuscripts that contain significant original research content. In general, *J-PV* requires that theory and simulations be supported by careful comparisons to experiment performed by either the authors or taken from the literature. In rare exceptions the significance of the original research contribution is high and validation of the theory or simulation is obvious or not technically possible, and thus comparisons are not necessary.

**Disclosure of Experimental Procedures and Methodologies:** the experimental results must include an experimental section that describes the experimental methods and specialized equipment in sufficient detail to permit repetition of the experiments by others.

**Reporting Efficiency that is either a Record or appears in the Title or Abstract:** Manuscript reporting a record efficiency or stating an efficiency in the title or abstract that the authors should include the following information.

- State the area and how it was defined (e.g., ohmic contact, aperture and mesa)
- Include the external spectral responsivity or quantum efficiency of the cell that corresponds to the efficiency claim.
- Report on all of the IV parameters (V<sub>oc</sub>, J<sub>sc</sub>, FF, P<sub>max</sub>, efficiency) including presenting the actual response curve.
- Include an estimate on the uncertainty in the efficiency.
- Provide a brief description of the measurement system.
- Give the calibration source for setting the light level (reference cell(s) material and how calibrated, (e.g., JPL balloon, PTB, Fraunhofer ISE, and NREL).
- If it is a 2-terminal multijunction cell, then the estimated photocurrent ratios under the simulator should be compared to under the reference spectrum.
- No efficiency is allowed that is based on subtracting shading losses from grids or metal inside the aperture (active area efficiency).

Native Language Author Names: IEEE supports the publication of Chinese, Japanese, and Korean (CJK) author names in the native language alongside the English versions of the names in the author list of an article. Chinese authors may use either Simplified or Traditional characters. Authors must provide the native language name in unicode characters to be displayed in the byline of the article, in parentheses, after the English version of the name. The manuscript can be prepared using the "Insert Symbols" list in Microsoft Word or the CJK Ascii Unicode for LaTeX. For more information, please visit the IEEE Author Digital Tool Box at the following URL:

http://www.ieee.org/publications\_standards/publications/authors/auth\_names\_native\_lang.pdf.

**Review Process:** The review process averages ten weeks. The author will be notified of the editor's decision based on the reviewers' recommendations. The reviewers' comments are confidential and must not be reproduced, published or distributed.

**Final Manuscript:** Upon acceptance for publication, the corresponding author will be provided with the final requirements for publication. Detailed instructions for preparing electronic files are available at: <a href="http://www.ieee.org/web/publications/authors/transjnl">http://www.ieee.org/web/publications/authors/transjnl</a>.

*Open Access:* This publication is a hybrid journal, allowing either Traditional manuscript submission or Open Access (author-pays OA) manuscript submission. Upon submission, if you choose to have your manuscript be an Open Access article, you commit to pay the discounted \$1,950 OA fee if your manuscript is accepted for publication to enable unrestricted public access. Any other application charges (such as over-length page charge and/or charge for the use of color in the print format) will be billed separately once the manuscript formatting is complete but prior to the publication. If you would like your manuscript to be a Traditional submission, your article will be available to qualified subscribers and purchasers via IEEE Xplore. No OA payment is required for Traditional submission. Note that once a paper is published as a Traditional submission, the paper cannot changed to OA publishing.

**Page Charges:** Upon acceptance for publication, the author's company or institution will be requested to pay a charge of \$110 per printed page to cover part of the cost of publication. Page charges for this journal, like those for journals of other professional societies, are not obligatory, nor a prerequisite for publication. There has been a significant decrease in authors' willingness to pay voluntary page charges. The outstanding reputation and high quality of *J-PV* depends in part on the collection of these charges. The author will receive 100 free reprints without covers if the charge is honored. Detailed payment instructions will accompany the page proof request.

Color Figures: Color figures will automatically be posted in color on the IEEE Xplore web site free of charge. The color-in-print charge is a flat rate of \$275 per figure. The corresponding author of the article will have the opportunity to address the color-in-print option during an "Article Setup" step. All invoices and payments are handled through an automated payment portal system. The payment portal allows various payment types such as credit card, bank wire transfers, check, pre-approved waivers, special payment circumstances, and third party billing. Please note that split payments are not supported at this time. If you have any questions, please contact <a href="mailto:oaprocessing@ieee.org">oaprocessing@ieee.org</a> for Open Access processing and <a href="mailto:reprints@ieee.org">reprints@ieee.org</a> for all other charges.

*Illustrations:* Previously published illustrations (figures, graphs, tables, drawings, etc.) must be so indicated by the line Reprinted from (name of author, title of paper, journal or source, vol., page no., and date) below the figure caption. It is the author's responsibility to secure permission from the previous publisher to reprint the material.

**Photos and Bios:** All papers submitted for publication should include a brief biography and photograph of the author(s).

**Graphical Abstract:** This journal accepts graphical abstracts and they must be peer reviewed. For more information about graphical abstracts and their specifications, please visit the following link: http://www.ieee.org/publications\_standards/publications/graphical\_abstract.pdf.

**Clearance and Copyright:** It is the policy of the IEEE to own the copyright to the technical contributions it publishes on behalf of the interests of the IEEE, its authors, and their employers, and to facilitate the appropriate reuse of this material by others. To comply with the United

States Copyright Law, authors are required to sign a digital version of the IEEE Copyright

Form with their original submission. This form is available online at: <a href="http://www.ieee.org/web/publications/rights/index.html">http://www.ieee.org/web/publications/rights/index.html</a>.

Please note, that if accepted, your manuscript will not be published if a copyright form is not received by the publication office.