

The Peer Review Process and EDS Golden List of Reviewers

IN 2002, the then Vice President of IEEE Electron Devices Society (EDS) Publications, Professor R. P. Jindal, instituted the concept of a “golden list” of reviewers to recognize the dedication and voluntary contribution of time by peer reviewers of the EDS journals, *ELECTRON DEVICE LETTERS* (EDL) and *TRANSACTIONS ON ELECTRON DEVICES* (T-ED). This editorial outlines the required roles and responsibilities of the “golden list” of EDS peer reviewers.

What Is the Peer Review Process?

It is well known that peer review in publications is a process of reviewing work of a scholar or scientist through review by other experts from the same field before publication. In general, peer review refers to the screening of submitted manuscripts and encourages authors to meet accepted standards of their discipline. It is designed to prevent dissemination of irrelevant findings, unwarranted claims, unacceptable interpretations, and personal views.

Peer review is the essential element in promoting quality and excellence in papers published in EDS journals such as EDL, T-ED, and *Journal of Photovoltaics* (JPV). Peer review provides authors an opportunity to improve the quality and clarity of their manuscripts. It also guides EDS journal editors in making publication decisions and identifying substandard manuscripts that should not be published. Individuals participating in the peer review process provide a valuable service to EDS journal editors by improving the literature in the EDS field of interest (FOI). Serving as a manuscript peer reviewer, hereafter referred to as the “reviewer,” is a critical professional activity and responsibility. As the number of scientific papers published each year continues to grow, the quality of the peer review process and the quality of the editorial board are considered the primary factors for a journal’s reputation, impact factor, and standing in the field.

Why Become an EDS Journal Reviewer?

Reviewing a manuscript takes time, and scholars contemplating a manuscript review at some point may ask themselves why they should volunteer time for such intellectual pursuits? The short answer to this question is that it is “right thing to do” to add high-quality literature to our society’s “stock of knowledge.” However, in a more practical sense, reviewing manuscripts is enjoyable; challenging; can provide continuing self-education; helps improve scholarly writing skills; affords

a privileged insight into the frontiers of knowledge; and, more importantly, develops critical thinking skills that may improve research, teaching, and performing day-to-day engineering tasks. EDS reviewers can take pride in knowing that they have contributed to enhancing and improving the literature in the EDS FOI while aiding authors in most effectively presenting their work. Furthermore, conducting quality reviews is a useful means of extending one’s professional reputation to become a member of the editorial board and, possibly, the Editor-in-Chief (EIC) of EDS journals. In EDS, we believe “*good reviewers make good editors, and good editors make good EICs.*” Ultimately, peer review is only as valuable as the contributions of individuals who participate in this confidential process.

Roles and Responsibilities of EDS Reviewers

The publication of quality papers in EDS journals heavily depends on the peer review process and the reviewers who dedicate their time and expertise to the cause. In addition to fairness in judgment and expertise in the field, EDS reviewers have enormous responsibilities toward its journals, editors, authors, and readers.

- 1) **Reviewer responsibilities toward EDS journals** include the pursuit of “*Satyam, Shivam, Sundaram,*” that is, “*Truth, Source of Truth, and Beauty.*” Therefore, reviewers should strive to:
 - Find the absolute “truth” or scientific merit of the submitted manuscript. That is, is it “good science?”
 - Find the “source of truth.” That is, is relevant prior art properly referenced?
 - Ensure “*beauty,*” meaning clarity and readability of presentation. That is, is it a coherent story with continuity from sentence-to-sentence, paragraph-to-paragraph, and section-to-section from start to finish of the submitted manuscript? Thus, the responsibilities of reviewers toward EDS journals include ensuring publication of high-quality papers and preventing flawed manuscripts from being published.
- 2) **Reviewer responsibilities toward EDS editors** include guiding them in making publication decisions of the submitted manuscript on time by providing a thoughtful, fair, constructive, and informative critique of the submitted manuscript in compliance with EDS publication policies. After manuscript evaluation, the actual written review should be constructed separately addressing the editor and authors. Part of the report includes the confidential candid comments to the editor about the specific elements of the manuscript, including a recommendation for its publication as is or after minor or major revisions.

The key responsibilities of the reviewers to the editor include

- timely submission of a detailed written review reporting the scientific merit, originality, and scope of the manuscript and the ways to improve it;
- recommendation for acceptance or rejection of the manuscript;
- reporting of the ethical concerns of a submitted manuscript and alerting the editor of duplicate publication and plagiarism;
- maintaining the confidentiality of all aspects of the review process by treating the submitted manuscript for peer review as the privileged information provided to the reviewer in confidence and by guarding the authors' identities and work;
- disclosing to the editor any personal or financial conflict of interest that will prevent a fair review and either declining the role as a reviewer or consulting with the editor to best address the potential conflict; and
- declining assignment as a reviewer if their expertise is limited on the assigned manuscript or they cannot review in a timely manner.

3) **Reviewer responsibilities toward EDS authors** include an unbiased detailed written report on the scholarly merits and the scientific value of the work, together with the documented basis for the reviewer's opinion. The review should be written in a constructive and courteous language, respecting the intellectual independence of the authors. The review should include mandatory comments to the authors in two parts.

- **A general overview of the manuscript** including a statement on the goal and the major findings of the work.
- **Specific detailed comments on the manuscript** to report on the major sections of the paper (e.g., title, abstract, introduction, methods, results, discussion, conclusions, references, figure legends, figures, and tables), identifying the specific location such as page, paragraph, and sentence to which the comments are referred to in the review. The absence of comments on any section or aspect of the paper implies its acceptance. The specific comments must include
 - indicating the clarity, conciseness, and relevance of writing and rating the manuscript's composition, scientific accuracy, originality, and interest to readers;
 - providing suggestions on the organization and writing of the manuscript, including any needed clarifications or omissions in the methods; the nature and extent of the figures, graphs, or appendices; and the appropriateness of any sections in the manuscript;
 - providing comments focused on improving the quality of the manuscript for the consideration of publication rather than simply indicating flaws in the submitted manuscript;

- identifying the omissions in referencing the relevant prior art; and
- providing suggestions on minor or major revisions or, in some cases, declining publication in its current form.

In summary, the reviewer's responsibilities toward authors include *constructive criticism* with *positive feedback* to improve the quality of the submitted manuscript. Even for a recommended rejected manuscript, the reviewer should provide the authors encouragement and instructions on the appropriateness, writing, and presentation of the submitted manuscript. Any particular gaps or omissions should be identified in a constructive fashion. *The purpose of peer review is not to identify flaws but to identify strengths and provide constructive comments to help the authors resolve weaknesses in their manuscript.* On the other hand, the reviewers are not obligated to salvage an extremely poorly written manuscript and/or flawed work. In addition, in the review report, the reviewer must maintain impartiality and integrity; that is, comments and conclusions should be based on an objective and impartial consideration of the facts, exclusive of personal or professional bias. Although reviews are confidential, all comments should be capable of withstanding public scrutiny.

4) **Reviewer responsibilities toward EDS readers** include

- ensuring that the published paper continues to maintain the highest standard of EDS journals;
- providing EDS readers evidenced-based technical information that can be validated by other researchers worldwide; and
- ensuring that the published paper in EDS journals cites all the relevant prior papers by other scientists worldwide.

Golden List of EDS Reviewers

At EDS, we realize that the consistent devotion to quality and speed of reviewers has made EDL and T-ED the go-to publications in the field of electron devices. Therefore, EDS recognizes the reviewers for their sustained contributions to enhancing the quality of our journals. In this spirit, a "golden list" of reviewers has been annually published since 2002. The motivation for establishing the "golden list" is the continuous pursuit of excellence in the review process for the benefit of the editorial board and of publishing highest quality papers. The selection process for the "golden list" is based on *the quality and completeness of the review process*, as described in the previous sections and *not on the number of reviews performed*. Although all of the roles and responsibilities of reviewers described in the previous sections are used in selecting our reviewer "golden list," the necessary and required responsibilities of the reviewers to be recognized for the "golden list" include

- responsiveness and timeliness of review submission;
- detailed comments supporting the recommendation on every aspect of the manuscript;
- specific suggestions for improving the manuscript in terms of clarity, brevity, and relevance;

- identifying all gaps and omissions in the manuscript and highlighting the lapses in referencing relevant prior art;
- identifying the overlaps with prior published manuscripts and alerting the editor of duplicate publication and plagiarism; and
- maintaining impartiality and integrity of comments solely based on the manuscript's scientific merit, originality, and quality of writing as well as on the relevance to the journal's scope and mission.

Preparation of the Golden List

Since 2002, in early July of every year, the EDS central office has been compiling lists of reviewers used by each EDL and T-ED editor over a 12-month period starting from July 1st

of the preceding year to June 30th of the current year. The names of the reviewers are picked from both the accepted and rejected manuscripts. It is the editor's responsibility to select the names of reviewers who satisfy the aforementioned criteria for inclusion in the "golden list."

Recognition of the Golden List of Reviewers

Since 2002, the qualified reviewers have been recognized every year by publishing the "golden list" in the December issues of EDL and T-ED with an accompanying editorial by the respective EIC.

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