



UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
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Dear Editors of Applied Physics Letters,

Thank you for your consideration of the perspective article entitle "Optoelectronic Intelligence" for publication in your journal. Three reviewers have thoroughly assessed the manuscript, and all three have recommended the manuscript for publication, conditional upon addressing their comments. I have now addressed the comments from all three reviewers. Their feedback is well reasoned and valuable, yet extensive in scope. Incorporating their comments and criticism was no small task, but I think the paper is stronger now that their concerns have been addressed. In particular, the reviewers predominantly sought greater contextualization of this work though more complete comparison with other related work in the field, as well as more thorough justification of the specific choices made in the hardware under consideration. The majority of changes and additional content speak to these two areas of concern. The manuscript is now longer than the typical length for such an article. In responding to reviews, I tried to be as concise as possible, the reviewers asked quite a few insightful and important questions. My answers are as succinct as possible without being superficial. Additionally, this perspective draws upon neuroscience, network theory, neuromorphic computing, and device physics including superconductors, semiconductors, and optics. Even a brief account of each of these subjects amounts to a longer-than-average article. But I believe in the present form the article is thorough, even-handed, and likely to have a significant impact in the field.

I have uploaded a pdf of the manuscript with all changes marked in green, a document listing all reviewer comments as well as my responses, and a new version of the manuscript containing all changes but without colored markings. I hope this draft will meet your approval and gain acceptance for publication in your journal. The content is timely and well matched to your readership. The community has a deep and urgent interest in the field of hardware for artificial intelligence. I was encouraged that all three reviewers were engaged in the discussion initiated in the manuscript and sought deeper understanding of the ideas being presented. This perspective article summarizes the last five years of work in our group at NIST in which we have tried to envision full neuromorphic systems capable of general intelligence. I hope to share this work with the broader community by publishing in Applied Physics Letters so that our effort can grow through the feedback of other researchers and inspire members of the community to take on some of the challenges identified in this work. I have already been contacted by one undergraduate who wishes to begin work in this area based on the arXiv version of the manuscript. Publication in APL will surely increase the visibility and further engage the community.

Thank you again for your consideration and your time,

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