

## EDITORIAL

### AI-generated scientific papers: Is it acceptable?

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Large language model (LLM) such as Generative Pre-trained Transformer 4 (GPT-4) and DeepSeek are capable of generating scientific papers.<sup>1</sup> It is trained based on a massive collection of texts, including full-text scientific articles, conference proceedings, and preprints, with reinforcement learning from human feedback. At present, the opinion on whether to accept artificial intelligence (AI)-generated scientific papers is still divided among the scientific communities. Using AI can be time-saving and could quickly generate complex information from numerous sources. On the other hand, it may produce low quality results with false citations, imaginary citations, or inaccurate information.<sup>2</sup>

Survey showed that younger individuals like PhD students (30%) and early career scientists (25%) were more likely to use AI-assisted technology, compared to advanced career and retired scientists (about 10%).<sup>2</sup> Scientific writing is not always about producing a great paper. It is the process that matters the most. During the process of writing, the author who is an expert in the field, stumbled upon an important question that needs to be addressed. Then, the author perform a literature review of the question and formulate a methodology to try to answer the question. This is a learning process that eventually improves one's ability on questioning and problem solving. We learn by going through this lengthy process. The problem with AI-generated scientific papers is, this process is bypassed. We stopped putting in the effort of thinking and writing. On paper, we might have a lot of publications by using this short-cut approach. However, do we really have the ability when we are ask to lead the younger generation of scientists as senior academicians?

In a review article on AI in academic writing, these were some of the recommendations provided: 1) A better detection method against AI misuse, 2) Awareness of AI limitations, 3) Transparency and ethical use of AI in writing, 4) Development of guidelines in the use of AI, 5) Recommendation of journal to ask author to declare AI use in writing.<sup>3</sup> I believe in future AI-assisted writing in scientific work is inevitable. The role of human should be to ascertain that AI-generated materials are reliable and trustworthy. Lastly, authors should be responsible to declare if the manuscript submitted is by AI-assisted technology. Nonetheless, AI should be allowed to improve readability and correct any grammatical errors in the manuscript.

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