

## Ministry of Education and Culture UNIVERSITAS NEGERI SEMARANG FACULTY OF MATHEMATICS AND NATURAL SCIENCES DEPARTMENT OF INTEGRATED SCIENCES IN COLLABORATION WITH PERKUMPULAN PENDIDIK IPA INDONESIA JURNAL PENDIDIKAN IPA INDONESIA



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## DECLARATION OF ORIGINALITY JURNAL PENDIDIKAN IPA INDONESIA

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We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. We further confirm that the order of authors listed in the manuscript has been approved by all of us.

We confirm that we have given due consideration to the protection of intellectual property associated with this work and that there are no impediments to publication, including the timing of publication, with respect to intellectual property. In so doing we confirm that we have followed the regulations of our institutions concerning intellectual property.

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