

## 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



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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 crit eria 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.

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