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**DEPARTMENT OF SCIENCE EDUCATION  
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#### **Email and Address**

Jl. Ciwaru Raya No. 25 Cipocok Jaya Serang Banten 42117 Email: [jppi@untirta.ac.id](mailto:jppi@untirta.ac.id) and [jppiuntirta@gmail.com](mailto:jppiuntirta@gmail.com)

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Since 2019 Jurnal Penelitian dan Pembelajaran IPA also covers the issues of  
environmental based-learning

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## PREFACE

Praise to Allah SWT who has given all his gifts and favors so that publishers are able to publish the Jurnal Penelitian dan Pembelajaran IPA volume 5, Issue 2, November 2019. Shalawat and greetings may be poured into Prophet Muhammad SAW, to his family, His companions and his followers until the end of time. The publication of this journal can't be separated from the support of various parties, from university to degree level, researchers from within and outside Universitas Sultan Ageng Tirtayasa (UNTIRTA), other partners and stakeholders. Do not forget to thanks the Dean of Faculty of Teacher Training and Education (FKIP) and Head of Department of Science Education, who has provided support in the publication of this journal. We would also like to thanks both the moral and material support given by all parties who provided the way to the publication of this journal. Hopefully this journal can be used and useful for the publication of research in UNTIRTA or outside UNTIRTA.

In volume 5 (five) issue 2 (two) consists of 8 articles. All articles are the result of a research study. The research methods used by the authors include descriptive, survey, quasi experiment, and classroom action research, research and development (R & D). The proportion of articles is 100% of articles from outside Universitas Sultan Ageng Tirtayasa

Finally the editorial board realizes that this journal is so far from perfect, constructive feedback and suggestions to publishers for future improvements so publishers hope that this journal can have better quality

Serang, November 2019

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