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Received: .....; Revised: .....; Accepted: .....

**Abstract**

*The abstract and keywords are written in English and Bahasa Indonesia. The abstract summarizes your work concisely (short and clear). It should clearly state **the background problem, the research purposes, the brief methods, the main results/findings, the conclusion, and the scientific impact**. The abstract should not include citations, tables, figures, and formulas. It should not be more than 300 words.*

**Keywords:** 2-5 keywords, separated by semicolon (;)

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**INTRODUCTION**

This template is dedicated to the researchers who will send a manuscript to Jurnal Penelitian Fisika dan Aplikasinya (JPFA). This template has been organized into general form of the scientific article and particular part could be modified or erased freely. In general, the article in JPFA is written in English (US). The article also consists of 2 columns, using "Palatino Linotype", font size 11, single line spacing, justified, and indentation on the first line in the new paragraph (by 5 characters). The article should be short and clear (about 6-15 pages).

The article sent to JPFA comes from the original **research article** (the article originality or state of the art should be mentioned in the introduction part) or the **review article** about physics and its application (see the scopes in JPFA). The **research article** contains the title, author's name, affiliation/institution, and postal address, abstract, keywords, introduction, method, results and

discussion, conclusion, acknowledgment, author contributions, declaration of competing interest, and references. The **review article** contains the title, author's name, affiliation/institution, and postal address, abstract, keywords, introduction, discussion, conclusion, acknowledgment, author contributions, declaration of competing interest, and references.

The introduction explains **brief background** (1-2 paragraph), **state of the art**, **gap analysis**, and **research objectives/questions**. The state of the art of the research includes research background, previous research, references, and theory related to the research. The gap analysis is the statement about why the research is needed to be conducted and the novelty (uniqueness) of the research. The research objective/questions state the research problem that will be solved in the manuscript. **This part should have 15-20% proportion of the manuscript.**

## METHOD

The **method** is written in full and detail so that it can be repeated by others (reproducible). The common methods should not be written in detail. This part contains **research design**, **research procedure**, **data sources or participants**, **data collecting technique(s)**, and **data analysis technique(s)**. **This part should have 10-15% proportion of the manuscript.**

### Second-Level Heading

Insert...

### Third-Level Heading

Insert...

### *Fourth-Level Heading*

Insert...

## RESULTS AND DISCUSSION

**Results and Discussion compose 60-70% of the manuscript.** This part is the main part of the research article. **Results** should **summarize or highlight the findings** rather than providing the detailed results and analysis. It contains the results taken from the data analysis and/or the hypothesis test results and only provide the data that support discussion. This part includes table(s) and graph(s) taken from the research results or data analysis.

**Discussion** plays the important part in a scientific article. This part **answers the problems**, **interprets the research results and the findings into the already known knowledge**, **confirms and/or contrasts with the research of other researchers**, **constructs the new theory**, and/or **modifies the previous theory**. Discussion must also contain **the implications of both theoretical and implementation results**.

Results and Discussion must answer what, why and what else questions. The research findings must be stated explicitly. After stating the research findings, the research findings and the relevant theory or hypothesis must be discussed comprehensively. The discussion section must explain the comparison of the research finding with the relevant results as well. Therefore, a notable citation must be found in the discussion section. After discussion, **in the last two paragraphs, the research limitation and further improvement** and also **the implication of the research finding** related to sciences should be stated clearly.

The mathematical equation is written separately from the paragraph using *Microsoft Equation Editor* (or *Design Science: MathType - Equation Editor*). The equation number is given on the right side as shown in Equation 1.

$$-\frac{\hbar^2}{2m}\nabla^2\Psi(r)+V(r)\Psi(r)=E\Psi(r) \quad (1)$$



**Figure 1.** The Logo of Jurnal Penelitian Fisika dan Aplikasinya (JPFA)

Figure is inserted separately from the paragraph and its title is put precisely under the figure as shown in Figure 1. The figure title is written in “*Palatino Linotype*”, font size 11, bold, single spacing, center, and should not more than 4 lines. The figure must be original (no plagiarism allowed) and have good contrast with high pixels density (at least 300 dpi). The figure file should be in the form of .jpg, .bmp, or .png, and must be sent separately from the article file.

The table uses a line with a border thickness of 1 pt and the letter size is 8 to 10 pt. Table title is inserted above the table. The title format basically has no distinctive from the figure title format. The table consists of horizontal above line and horizontal bottom line and another horizontal line that separating between the table head and the table body, as shown in Table 1.

**Table 1.** The Bound State Relativistic Energy for Pseudospin Symmetry with Tensor Potential

$l$	$n$	$\kappa$	State	$E_{n\kappa}$ $V_1 = 0.6 \text{ fm}$
0	1	-1	$1s_{1/2}$	-0.04585 220
1	1	-2	$1p_{3/2}$	-0.07452 6663
2	1	-3	$1d_{5/2}$	-0.10983 7332

The figure, chart, diagram, graph, table, etc. should be able to explain something and its existence has great meaning for the article. Therefore, these objects must be discussed and cited in the text comprehensively.

## Second-Level Heading

Insert...

## Third-Level Heading

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## *Fouth-Level Heading*

Insert...

## CONCLUSION

This part is written in paragraph form (not in the form of points or numbers). The conclusion must be written concisely (brief and clearly). It should not re-discuss the research results. The **conclusion must be able to answer the research objectives/questions** and should not repeat the abstract or simply rewrite the experimental results. This part should reflect the **research limitations** for further improvement/research and the **innovation or improvement** of the existing science.

## ACKNOWLEDGMENT (OPTIONAL)

Acknowledgment is addressed to a person and/or groups and also the institution that help the research both in a direct and/or indirect way, including the financial support from government or private institution. For the **research with research grant** or financial support, **the research funder, research grant name, and contract number** must be stated on.

## AUTHOR CONTRIBUTIONS

The Authors must state all of the Author's contributions to this research/manuscript. The contribution must be stated in the term of CRediT (Contributor Roles Taxonomy), see Appendix 1. **Example:** Budi Jatmiko: Conceptualization, Methodology, and Validation; Utama Alan Deta: Methodology, Formal Analysis, Resources, and Writing - Original Draft; and Nurita Apridiana Lestari: Data Curation, Project Administration, and Writing - Original Draft.

## DECLARATION OF COMPETING INTEREST

The authors declare no known financial conflicts of interest or personal relationships that could have influenced the work reported in this manuscript.

## DECLARATION OF ETHICS

The authors declare that the research and writing of this manuscript adhere to ethical standards of research and publication, in accordance with scientific principles, and are free from plagiarism.

## DECLARATION OF ASSISTIVE TECHNOLOGIES IN THE WRITING PROCCESS

The authors affirm that Generative Artificial Intelligence and other assistive technologies were not excessively utilized in the research and writing processes of this manuscript.

## REFERENCES

*First and Second Author (if more than two, it should be written "et al")*

The article should use at least 30 references with (at least) 80% of the newest references (not more than 5 years) and consist of (at least) 80% articles from international reputable scientific journals (indexed internationally i.e. Sinta 1 or 2, Scopus, WoS, etc.). The references use the numerical system, font size 11, and are sorted by the **sequence of use/ appearance** in the article. The link or DOI of the cited articles must be given completely (see example numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 14, 15, 16, and 17). In citing for the article body, the citation is done using square brackets containing the sequence number of the literature, for example [1].

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##### Journal with DOI

- [1] Deta UA and Nurlailiyah A. Studi Korelasi antara Kemampuan Matematika dengan Hasil Belajar Fisika di SMA PGRI Sumberrejo Bojonegoro Tahun Ajaran 2014/2015. *Jurnal Penelitian Fisika dan Aplikasinya (JPFA)*. 2015; 5(2): 64-69. DOI: <http://dx.doi.org/10.26740/jpfa.v5n2.p64-69>.
- [2] Majumdar S, Mukherjee N and Roy AK. Information Entropy and Complexity Measure in Generalized Kratzer Potential. *Chemical Physics Letters*. 2019; 716: 257-264. DOI: <https://doi.org/10.1016/j.cplett.2018.12.032>.

##### Journal without DOI

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- [4] Ikot AN, Anita AD, Akpan IO and Awoga OA. Bound State Solutions of Schrodinger Equation with Modified hylleraas plus Exponential Rosen Morse Potential. *Revista Mexicana de Fisica*. 2013; 59: 46-53. Available from: [https://rmf.smf.mx/pdf/rmf/59/1/59\\_1\\_46.pdf](https://rmf.smf.mx/pdf/rmf/59/1/59_1_46.pdf).

##### Journal/Proceeding without Issue and All Page Number of Articles in One Issue/Volume Started from 1

- [5] Hariyono E, Liliyasi, Tjasyono B, and Madlazim. Volcanic Eruption Crisis and the Challenges of Geoscience Education in Indonesia. *AIP Conference Proceedings*. 2016; 1708: 080004. DOI: <https://doi.org/10.1063/1.4941190>.
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- [7] Ramadhan TB, Djamaluddin T, and Utama JA. Re-Evaluation of Hilaal Visibility Criteria in Indonesia by Using Indonesia and International Observational Data. *Proceeding of International Conference On Research, Implementation and Education of Mathematics and Sciences*. Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Negeri Yogyakarta. 2014; 87-92. Available from: <http://eprints.uny.ac.id/id/eprint/11520>.
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#### Offline Proceeding

- [10] Redish EF. Changing Student Ways of Knowing: What Should Our Students Learn in a Physics Class?. *Proceedings of World View on Physics Education 2005: Focusing on Change*. Delhi; 2005.

#### Act, Regulation, Law, or Standard

- [11] Republik Indonesia. *Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional* (Pasal 40). Jakarta: Republik Indonesia; 2003. Available form: <https://kemenag.go.id/file/dokumen/UU2003.pdf>.
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#### Website (blog is prohibited), Online Article, Online Book, or Online Magazine

- [14] Badan Meteorologi Klimatologi dan Geofisika. *Cuaca*. Available from: <http://bmkg.go.id/cuaca> [accessed 17 July 2017].
- [15] Media Garda Asakota. *Pertambangan Sumbang Kontribusi Besar APBN*; 2017. Available from: <http://www.gardaasakota.com/2011/04/pertambangan-sumbang-kontribusi-besar.html>.
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- [21] Nuwaiir. *Kajian Impedansi dan Kapasitansi Listrik pada Membran Telur Ayam Ras*. Undergraduate Thesis. Unpublished. Bogor: Institut Pertanian Bogor; 2009.
- [22] Gunawan I. *Earthquake Source Properties and Site Response for Indonesia Strong-Motion Network*.

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- [23] Suyidno, Salam A, and Dewantara D. *Uji Coba Model Creative Responsibility Based Learning (CRBL) untuk Melatihkan Keterampilan Proses Sains, Tanggung Jawab, dan Kreativitas Ilmiah Siswa SMA/MA*. Research Report. Unpublished. Banjarmasin: Universitas Lambung Mangkurat; 2018.

## Appendix 1

### CRediT (Contributor Roles Taxonomy)

Term	Definition
Conceptualization	Ideas; formulation or evolution of overarching research goals and aims
Methodology	Development or design of methodology; creation of models
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components
Validation	Verification, whether as a part of the activity or separate, of the overall replication/ reproducibility of results/experiments and other research outputs
Formal analysis	Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools
Data Curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later reuse
Writing - Original Draft	Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation)
Writing - Review & Editing	Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre-or postpublication stages
Visualization	Preparation, creation and/or presentation of the published work, specifically visualization/ data presentation
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team
Project administration	Management and coordination responsibility for the research activity planning and execution
Funding acquisition	Acquisition of the financial support for the project leading to this publication

## Appendix 2

### Authors' Short CV

#### **First Author**

Full Name :  
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City and Postal Code :  
Country :  
Phone/WA\* : (+ .....)  
Expertise :  
Google Scholar ID :  
Scopus ID :  
Corresponding Author : Yes/No\*\*

#### **Second Author**

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Affiliation :  
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City and Postal Code :  
Country :  
Phone/WA\* : (+ .....)  
Expertise :  
Google Scholar ID :  
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**Appendix 3**  
**Highlights of the Manuscript**

State the research highlights/finding/novelty in 1-3 paragraph.

## Appendix 4

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2. International/Overseas Reviewer Candidates (3-4 reviewer candidates)

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3. Non-Preferred Reviewers (Optional)

Maximum 5 researchers with reasonable explanation, you can skip this part.

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Note: The Reviewer must not be affiliated with the Author. Editor is **not obligated** to use any reviewer candidates suggested by Authors.

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