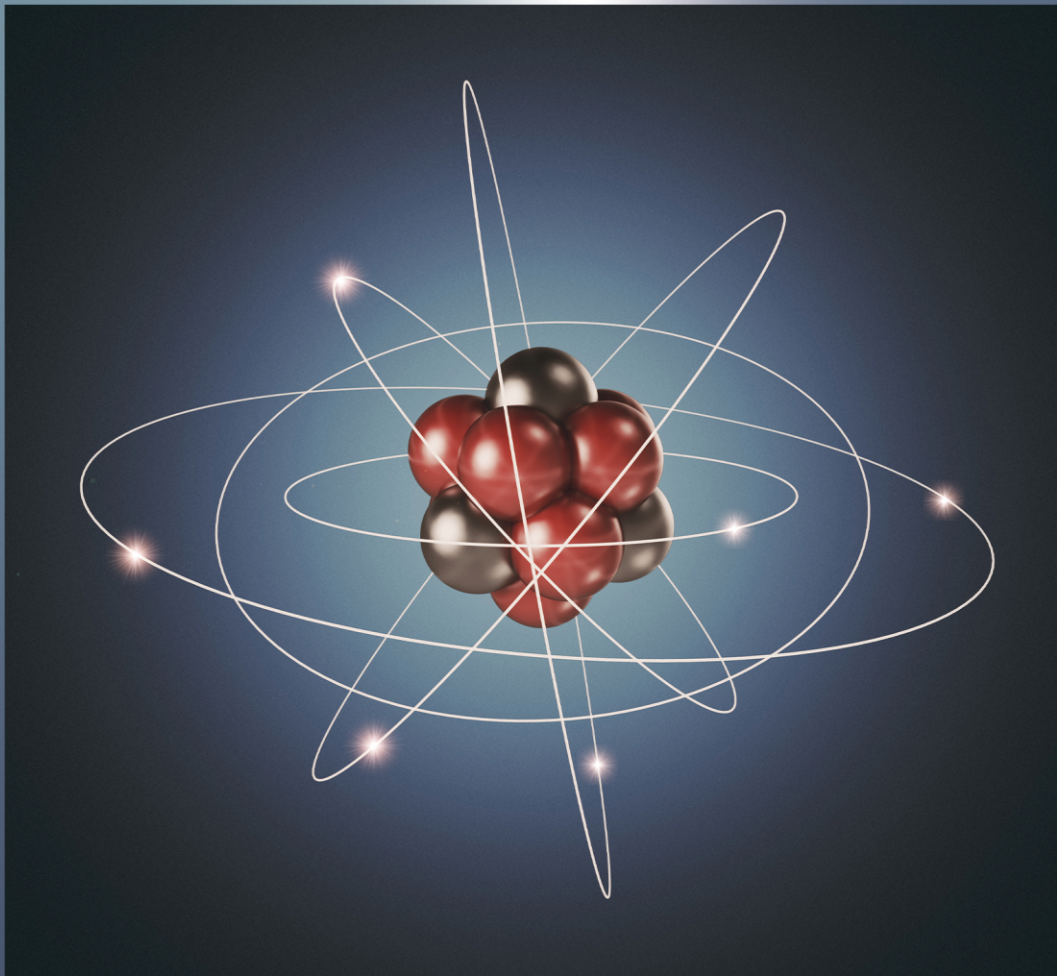


ISSN: 2153-1196 Volume 16, Number 7, July 2025



Journal of Modern Physics



ISSN: 2153-1196



<https://www.scirp.org/journal/jmp>

Journal Editorial Board

ISSN: 2153-1196 (Print) ISSN: 2153-120X (Online)

<https://www.scirp.org/journal/jmp>

Editor-in-Chief

Prof. Haiduke Sarafian

The Pennsylvania State University, USA

Editorial Board

Prof. Nikolai A. Sobolev

Universidade de Aveiro, Portugal

Prof. Mohamed Abu-Shady

Menoufia University, Egypt

Dr. Muhammad Ajaz

Abdul Wali Khan University Mardan, Pakistan

Dr. Hamid Alemohammad

University of Waterloo, Canada

Prof. Emad K. Al-Shakarchi

Al-Nahrain University, Iraq

Dr. Francesco Bajardi

Scuola Superiore Meridionale, Italy

Prof. Kazuharu Bamba

Fukushima University, Japan

Prof. Antony J. Bourdillon

UHRL, USA

Dr. Swarniv Chandra

Government General Degree College, India

Prof. Wan Ki Chow

The Hong Kong Polytechnic University, China

Prof. Stephen Robert Cotanch

NC State University, USA

Prof. Claude Daviau

Ministry of National Education, France

Prof. Rami Ahmad El-Nabulsi

Chiang Mai University, Thailand

Prof. Peter Chin Wan Fung

The University of Hong Kong, China

Prof. Ju Gao

The University of Hong Kong, China

Prof. Robert Golub

North Carolina State University, USA

Dr. Sachin Goyal

University of California, USA

Prof. Wei Guo

Florida State University, USA

Prof. Karl Hess

University of Illinois, USA

Prof. Peter Otto Hess

Universidad Nacional Autónoma de México, Mexico

Prof. Ahmad A. Hujeirat

University of Heidelberg, Germany

Prof. Haikel Jelassi

National Center for Nuclear Science and Technology, Tunisia

Prof. Magd Elias Kahil

October University for Modern Sciences and Arts (MSA), Egypt

Prof. Santosh Kumar Karn

Sharda University, India

Prof. Guennadi A. Kouzaev

Norwegian University of Science and Technology, Norway

Prof. Sanjeev Kumar

Dr. Bhimrao Ambedkar University, India

Dr. Giuseppe Levi

Bologna University, Italy

Prof. Yu-Xian Li

Hebei Normal University, China

Prof. Anton A. Lipovka

Sonora University, Mexico

Prof. Wu-Ming Liu

Chinese Academy of Sciences, China

Dr. Ludi Miao

Cornell University, USA

Dr. Grégory Moreau

Paris-Saclay University, France

Prof. Christophe J. Muller

University of Provence, France

Dr. Rada Novakovic

National Research Council, Italy

Prof. Octavio Obregón

Guanajuato University, Mexico

Prof. Vinod Prasad

University of Delhi, India

Prof. Mohammad Mehdi Rashidi

University of Electronic Science and Technology of China, China

Prof. Kunnat J. Sebastian

University of Massachusetts, USA

Dr. Ramesh C. Sharma

Defence Research and Development Organisation India, India

Dr. Reinoud Jan Slagter

Astronomisch Fysisch Onderzoek Nederland, Netherlands

Dr. Giorgio Sonnino

Université Libre de Bruxelles, Belgium

Prof. Yogendra Srivastava

Northeastern University, USA

Dr. Mitko Stoev

South-West University “Neofit Rilski”, Bulgaria

Prof. A. L. Roy Vellaisamy

Hong Kong Metropolitan University, China

Prof. Lev Zalman Vilenchik

Felicitex Therapeutics, USA

Prof. Anzhong Wang

Baylor University, USA

Prof. Cong Wang

Beihang University, China

Prof. Meishan Zhao

University of Chicago, USA

Table of Contents

Volume 16 Number 7

July 2025

Masses of Up and Down Quarks

F. Rafie.....933

Wave Generation by Bessel Polarized Laser Beam in Plasma Beat-Wave Accelerator

B. F. Mohamed, A. M. Gouda, R. A. Albrulosity, N. M. Elbasha.....940

Reassessing John Bell's Response to EPR

F. Lad.....950

Correction Procedure for Empirical Equations for Calculating the Cosmic Microwave Background Temperature

T. Miyashita.....968

Gravitational Electromagnetic Gauge Field

B. Qiao.....985

Galileo vs. Aristotle, Principles of Equivalence and the Gravitational Acceleration of Atoms according to General Relativity

C. H. McGruder III.....1026

About the Possibility of Traveling Faster than the Speed of Light

G. V. López.....1037



Call for Papers

Journal of Modern Physics

ISSN: 2153-1196 (Print) ISSN: 2153-120X (Online)
<https://www.scirp.org/journal/jmp>

Journal of Modern Physics (JMP) is an international journal dedicated to the latest advancement of modern physics. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of modern physics.

Subject Coverage

Journal of Modern Physics publishes original papers including but not limited to the following fields:

Biophysics and Medical Physics
Complex Systems Physics
Computational Physics
Condensed Matter Physics
Cosmology and Early Universe
Earth and Planetary Sciences
General Relativity
High Energy Astrophysics
High Energy/Accelerator Physics
Instrumentation and Measurement
Interdisciplinary Physics
Materials Sciences and Technology
Mathematical Physics
Mechanical Response of Solids and Structures

New Materials: Micro and Nano-Mechanics and Homogeneization
Non-Equilibrium Thermodynamics and Statistical Mechanics
Nuclear Science and Engineering
Optics
Physics of Nanostructures
Plasma Physics
Quantum Mechanical Developments
Quantum Theory
Relativistic Astrophysics
String Theory
Superconducting Physics
Theoretical High Energy Physics
Thermology

We are also interested in: 1) Short Reports—2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data; 2) Book Reviews—Comments and critiques.

Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

Website and E-Mail

<https://www.scirp.org/journal/jmp> E-mail: jmp@scirp.org

What is SCIRP?

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

What is Open Access?

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



Website: <https://www.scirp.org>

Subscription: sub@scirp.org

Advertisement: service@scirp.org