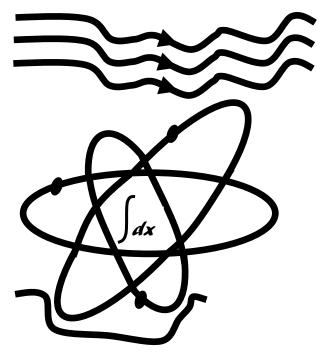


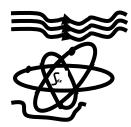
TRANSACTIONS

OF THE

NIGERIAN ASSOCIATION OF MATHEMATICAL PHYSICS



Published by Nigerian Association of Mathematical Physics



THE NIGERIAN ASSOCIATION OF MATHEMATICAL PHYSICS

(NAMP)

Editorial Board for NAMP Transactions

Professor G. Babaji: Department of Physics, Bayero University, Kano. Professor L. Taura: Department of Physics, Bayero University, Kano. Professor J.O. Fiase: Department of Physics, Benue State University, Makurdi Professor F. Matthew Ojelabi: Department of Physics, Ekiti State University, Ado-Ekiti. Professor S.T. Oni: Department of Mathematics, Federal University of Technology, Akure. Professor A.N. Njah: Department of Physics, University of Lagos, Lagos. Professor J.O.A. Idiodi: Department of Physics, University of Benin, Benin City. Professor J.A. Gbadeyan: Department of Mathematics, University of Ilorin, Nigeria. Professor J.O. Omolehin: Department of Mathematics, University of Ilorin, Ilorin. Professor K.A. Gbolagade: Department of Computer and Information Science, Kwara State University. Professor M.N.O. Ikhile: Department of Mathematics, University of Benin, Benin City. Professor J.O. Adeniran: National Mathematical Centre, Abuja. Professor M.O. Oyesanya: Department of Mathematics, University of Nigeria, Nsukka Professor G.C.E. Mbah: Department of Mathematics, University of Nigeria, Nsukka Professor S.M. Ogbonmwan: Department of Mathematics, University of Benin, Benin City. Professor E.O. Ayoola Department of Mathematics, University of Ibadan, Ibadan.

Council of NAMP

Professor G. Babaji/Bayero University Kano/Nigeria/Nigeria/President Professor Vincent Asor/Michael Okpara University of Agriculture, Umudike/Nigeria/Vice-President Professor E.O. Oghre/University of Benin, Benin City/Nigeria/Secretary Dr. Mrs. K-K.A. Abdullah/Olabisi Onabanjo University/Nigeria/Asst. Secretary Professor A.O. Popoola/Osun State University, Osogbo/Nigeria/Treasurer Professor John O.A. Idiodi/University of Benin, Benin City/Nigeria/Editor-in-Chief

Correspondence

All correspondence relating to NAMP Publications and the submission of articles for publication Should be addressed to the **Editor-in-Chief**, whose address is: Professor John O.A. Idiodi, Department of Physics, University of Benin, Benin City, Nigeria. Email: jidiodi@hotmail.com; Tel. +2348037994106 For further information, check our website: www.nampjournals.org.

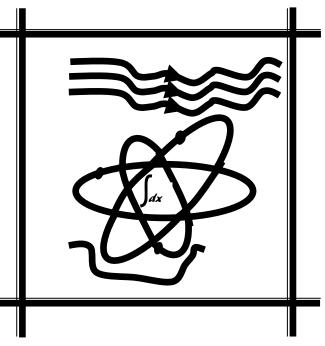
The Nigerian Association of Mathematical Physics, April - June, 2021 **Transactions of the nigerian association of mathematical physics** TRANSACTIONS

OF THE

NIGERIAN ASSOCIATION OF MATHEMATICAL PHYSICS

Volume 15

April – June, 2021



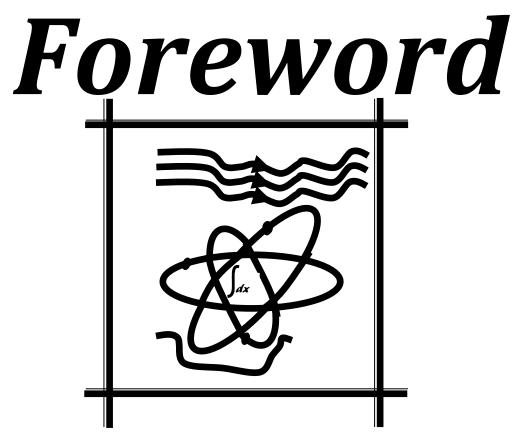
Published by

Nigerian Association of Mathematical Physics

Printed and bound in Nigeria by:

AMBIK Press td., 4, Olike-Odibi Avenue, Isiohor, Benin City, Nigeria. Phone: +2348037113845

JNAMP Typesetter: Dr. Ben. Iyorzor, e-mail: beniyorzor@yahoo.com, Tel.: +2347035400919 Transactions of the Nigerian Association of Mathematical Physics Volume 15, April – June, 2021



In the foreword to the Journal of NAMP, whose maiden issue came out in 1992, it has been noted that there were only very few scientists in Nigeria who could strictly speaking be called Mathematical Physicists. For this reason, it was decided that the term Mathematical Physics should be broadened to mean: any Scientist who applies fairly rigorous mathematics to Physics, Chemistry, Engineering, or other sciences and also any Mathematician whose results have direct applicability in Physics, Chemistry, Engineering and so forth. In a great country like Nigeria, the process of growth which led to the formation of NAMP in 1979 has produced, as at today, quite a number of scientists whose works bear signatures of the true meaning of the term Mathematical Physicist. To capture such works is the burden of this second Journal of NAMP, called **Transactions** of the Nigerian Association of Mathematical Physics.

It is my sincere hope that several scientists will try to have their works published in the Transactions of NAMP.

Prof. G. Babaji

April – June., 2021.

Transactions of the Nigerian Association of Mathematical Physics Volume 15 (April – June, 2021).