



LMAP

LABORATORY OF
MATHEMATICS AND
APPLIED PHYSICS
المدرسة العليا للأساتذة - بوسادة
ENS-BOUSAADA

Ministry of Higher Education and Scientific Research
Higher Normal School of Bou Saada
Department of Science Physics and Laboratory
of Mathematics and Applied Physics



CERTIFICATE OF PARTICIPATION

**The Organizing Committee of the Second National Conference on Physics and its Applications
(20 Novembre 2025) is pleased to award this certificate to :**

Amar GUICHI

in recognition of his active participation in the conference with an Oral presentation entitled: " Parameter Estimation of Photovoltaic Models Using an Optimization Algorithm Inspired by Plant Water Uptake and Transport Mechanisms "

Co-author: Ahmed Bendib

