



People's Democratic Republic of Algeria  
Ministry of Higher Education and Scientific Research  
University of Mohamed El Bachir El Ibrahimi - Bordj Bou Arreridj - Algeria Faculty of  
Sciences and Technology  
Department of Matter Sciences  
Laboratory of Materials Physics, Radiation and Nanostructures



# CERTIFICATE OF PARTICIPATION

THIS IS TO CERTIFY THAT

**SIASSI Abderrahim**

has participated in the national seminar entitled :

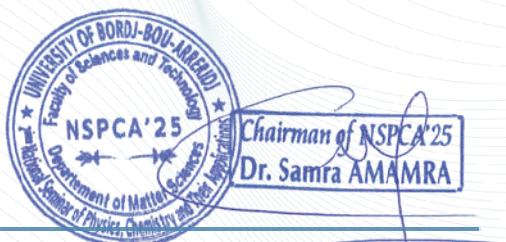
**“2<sup>nd</sup> NATIONAL SEMINAR OF PHYSICS, CHEMISTRY AND THEIR APPLICATIONS (NSPCA’25)”**

which has been held in the Faculty of Sciences and Technology, UNIVERSITY OF MOHAMED EL BACHIR EL IBRAHIMI of Bordj Bou Arreridj, Algeria. February 17<sup>th</sup>-18<sup>th</sup>, 2025.

**Paper Title:** Structural and Optical Properties of Mn<sub>3</sub>O<sub>4</sub> thin films by Sol-gel spin coating Method

**Presentation Type:** Poster

**Co-Authors:** Rabie Amari, Abdelhalim Kahoul, Bahri Deghfel, Noudjoud Lebgaa, Salim Daoudi



NSPCA' 25 CHAIRMAN

SAMRA AMAMRA



HEAD OF THE LABORATORY

ABDELHALIM KAHOUL