

The American University in Cairo
School of Sciences and Engineering

Phosphomolybdic Acid-Doped Zeolitic Imidazolate Framework-8 Hybrid:
Nanostructured Material with Synergistic Antibacterial Effect.

A Thesis Submitted by

Mariam Mohammad Abdelkhalek

To the

Nanotechnology Graduate Program

September 6th, 2023

In partial fulfillment of the requirements for the degree of

Master of Science in Nanotechnology

Has been approved by

Prof. Nageh Allam (Advisor)
Professor & Nanotechnology Graduate Program Director, Physics Department
American University in Cairo

DocuSigned by:
Prof. Nageh Allam
CC03BE4FF608475...

Prof. Rania Siam (Co-Advisor)
Professor, Biology Department
American University in Cairo

DocuSigned by:
Prof. Rania Siam
CC660E412F8C496...

Prof. Ahmed Moustafa (Internal Examiner)
Professor & Chair, Biology Department
American University in Cairo

DocuSigned by:
Prof. Ahmed Moustafa
8FB0E52084348B...

Prof. Mona Adel Khattab (External Examiner)
Professor of Medical Microbiology and Immunology, Faculty of Medicine
Ain Shams University

DocuSigned by:
Prof. Mona Adel Khattab
75273A10F6624FC...

Dr. Ehab El Sawy (Moderator)
Associate Professor, Chemistry Department
American University in Cairo

DocuSigned by:
Dr. Ehab El Sawy
801B3C0CC8AA475...

DocuSigned by:
Prof. Nageh Allam
CC03BE4FF608475...

06/09/2023
Date

Graduate Program Director


Dean

SEPT 11, 2023
Date