



SYNTHESIS AND CHARACTERIZATION OF NANOGRAHITE  
AND GRAPHENE FOR pH SENSOR

MISS BUPPHAPAN PUANGBUPPHA

A THESIS SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR  
THE DEGREE OF MASTER OF SCIENCE (PHYSICS)  
FACULTY OF SCIENCE  
KING MONGKUT'S UNIVERSITY OF TECHNOLOGY THONBURI  
2012