



STUDY ON PHYSICAL, STRUCTURAL, OPTICAL AND
LUMINESCENCE PROPERTIES OF
ZINC BISMUTH BORATE GLASSES DOPED WITH Eu^{3+}

MS. PATARAWAGEE YASAKA

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY (PHYSICS)
FACULTY OF SCIENCE
KING MONGKUT'S UNIVERSITY OF TECHNOLOGY THONBURI

2014

Study on Physical, Structural, Optical and Luminescence Properties of
Zinc Bismuth Borate Glasses Doped with Eu³⁺

Ms. Patarawagee Yasaka M.Sc. (Physics)

A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy (Physics)
Faculty of Science
King Mongkut's University of Technology Thonburi
2014

Dissertation Committee

..... Chairman of Dissertation Committee
(Assoc. Prof. Supanee Limsuwan, Ph.D.)

..... Member and Dissertation Advisor
(Lect. Nakin Pattanaboonmee, Ph.D.)

..... Member and Dissertation Co-Advisor
(Asst. Prof. Jakrapong Kaewkhao, Ph.D.)

..... Member
(Asst. Prof. Wandee Onreabroy, Ph.D.)

..... Member
(Lect. Parnuwat Chimalawong, Ph.D.)