

DISSERTATION

MODIFICATION OF MAGNETIC MATERIAL/CHITOSAN COMPOSITE WITH QUATERNARY AMMONIUM SALTS AS BASE CATALYST FOR LEVULINIC ACID ESTERIFICATION

MODIFIKASI MATERIAL KOMPOSIT MAGNETIK/KITOSAN DENGAN GARAM KUARTERNER AMONIUM SEBAGAI KATALIS BASA UNTUK ESTERIFIKASI ASAM LEVULINAT

Submitted to fulfill one of the requirements to obtain the degree
of Doctor of Chemistry



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**DOCTORAL STUDY PROGRAM IN CHEMISTRY
DEPARTMENT OF CHEMISTRY
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YOGYAKARTA
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RATIFICATION PAGE

DISSERTATION

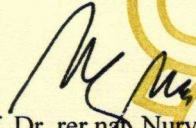
**MODIFICATION OF MAGNETIC MATERIAL/CHITOSAN COMPOSITE
COATED WITH QUATERNARY AMMONIUM SALTS AS BASE
CATALYST FOR LEVULINIC ACID ESTERIFICATION**

Prepared and arranged by:

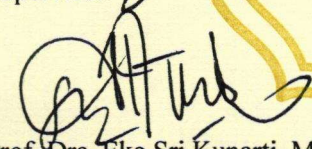
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Defended in front of Examiner Board
On May 05th, 2025

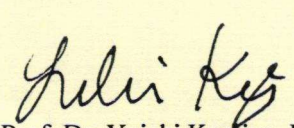
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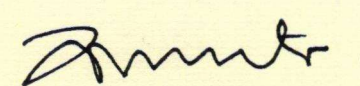

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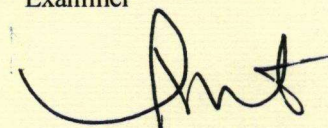

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a.n. Dekan FMIPA UGM
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