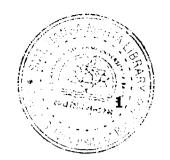
#### **GENERAL INTRODUCTION**



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- Synthesis of Undecamolybdophosphate
- Characterization
  - Elemental Analysis
  - Thermal Analysis
  - Fourier Transform Infrared Spectroscopy
  - 31P MAS NMR
  - Diffused Reflectance Spectra
  - Powder X-ray Diffraction
- Synthesis of Supported Undecamolybdophosphates
- Characterization
  - Chemical stability
  - Leaching test
  - BET surface area
  - Thermal Analysis
  - Fourier Transform Infrared Spectroscopy
  - 31P MAS NMR
  - Diffused Reflectance Spectra
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- Conclusions

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- Introduction
- Oxidation reactions using O<sub>2</sub> as an oxidant
  - Oxidation of alcohols (benzyl alcohol, cyclopentanol, cyclohexanol, 1-hexanol, 1- octanol)
  - Oxidation of alkenes (styrene, α-methyl styrene, cyclohexene)
  - Oxidation reactions using H<sub>2</sub>O<sub>2</sub> as an oxidant

- Oxidation of alcohols (benzyl alcohol, cyclopentanol, cyclohexanol, 1-hexanol, 1- octanol)
- Oxidation of alkenes (styrene, α-methyl styrene, cyclohexene)
- Probable reaction mechanism
- Kinetic study
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- Characterization of Transition metal (Co, Mn)- substituted phosphomolybdates
  - Elemental Analysis
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  - Fourier Transform Infrared Spectroscopy
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  - Electron Spin Resonance Spectroscopy
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- Characterization of Ni- substituted phosphomolybdate
  - Elemental Analysis
  - Thermal analysis
  - Powder X-ray Diffraction
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Introduction

- Oxidation reactions using O2 as an oxidant
  - Oxidation of alcohols (benzyl alcohol, cyclopentanol, cyclohexanol, 1-hexanol, 1- octanol)
  - Oxidation of alkenes (styrene, α-methyl styrene, cyclohexene)
  - Probable reaction mechanism
- Oxidation reactions using H<sub>2</sub>O<sub>2</sub> as an oxidant
  - Oxidation of alcohols (benzyl alcohol, cyclopentanol, cyclohexanol, 1-hexanol, 1- octanol)
  - Oxidation of alkenes (styrene, α-methyl styrene, cyclohexene)
  - Kinetic study
- Conclusions

Chapter - 7 Use of PMo11Ni as a sustainable catalyst for Suzuki coupling

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- NOVELTY OF THE WORK
- Papers presented in International/National Conference, Symposium