Name of the Scholar: Shabnam Pathan

Name of the Supervisor: Prof. Sharif Ahmad

Department: Chemistry

Title of the Thesis: Development of Waterborne Alkyds and their Derivatives

Abstract: The work in the thesis is focused on the synthesis of sustainable resource based waterborne alkyd.

The thesis has been divided into the following six chapters.

Chapter 1: Introduction and literature review

This chapter highlights general information about the definition of waterborne polymers, formulation of waterborne polymers, significance of waterborne polymers, vegetable oil, and vegetable oil based waterborne polymers.

Chapter 2: Characterization techniques and Instrumentation

The chapter briefly describes various standard methods and characterization techniques used to characterize the synthesized coating material.

Chapter 3: Synthesis, characterization and corrosion resistance performance of waterborne soy alkyd coatings

In this chapter, we report the synthesis of butylated melamine formaldehyde (BMF) modified waterborne soy alkyd (SA-BMF) and investigated its application as an anticorrosive as well as antibacterial coating material.

Chapter 4: Synthesis, characterization and corrosion resistance performance of waterborne castor alkyd coatings

In the present investigation, we report the synthesis of butylated melamine formaldehyde (BMF) cured waterborne castor alkyd (WCA-BMF) for anticorrosion application.

Chapter 5: Synthesis and characterization of waterborne IPTES and MF-IPTES linseed alkyd hybrid

Chapter 5 embodies the synthesis, spectral, thermal and morphological studies of waterborne linseed alkyd hybrid material (OIH). OIH were prepared from modified linseed alkyd as organic constituent and 3-isocyanatotriethoxypropyl silane [IPTES] as inorganic precursor.

Chapter 6: Studies on physico-mechanical and corrosion resistance performance of waterborne NLA-IPTES and BPA-MF-IPTES hybrid coatings

The present chapter deals with the anticorrosive properties of NLA-IPTES and BPA-MF-IPTES hybrid coatings.