The 211th MANA Seminar

Electroploymerization of Aniline onto Active Metal Substrate

Chair: Dr. Lok K. Shrestha (ICYS-MANA Researcher)

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Conductive polymers are widely studied because of their interesting mechanical and electrical properties which allowed their use in a large field of applications. Promising applications are in the field of energy storage, electrocatalysis, organic electrochemistry, bioelectrochemistry, photoelectrochemistry, electroanalysis, sensors, electrochromic displays, microsystem technologies, electronic devices, microwavescreening, and corrosion protection etc. Preparation, characterization and application of electrochemically active, electronically conducting polymeric systems are still in the foreground of research activity in electrochemistry. Electrochemical techniquesare suitable for controlled synthesis of conductive polymer, fine tuning of a well-defined oxidation state and its characterization. It has found that the structure and electronic properties of conductive polymers are strongly related to the synthesis conditions. In this talk, electropolymerization of aniline onto mild steel from aqueous oxalic acid solutionwill be discussed. Electroploymerization of aniline on active metal is not easy since metal gets oxidized before the oxidation of monomer is reached. To structure a good film therefore, it is necessary to optimize the electrochemical condition. Chronoamperometry and cyclic voltammetry methods for the formation of polyamine film (PANI) will be discussed. The effect of passivation time, current density, and symmetric and asymmetric scan rate on the formation and characteristics of PANI film will also be discussed. Finally possible applications of electroploymeriztion of aniline will be highlighted.

Venue: **Seminar Room #431, MANA Bldg.**

Date: **June 24th (Friday)** ***Time:*** **15:30-16:15**

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