# CYCLIC VOLTAMMETRIC DETERMINATION OF ACETYLSALICYLIC ACID IN PHARMACEUTICAL FORMULATIONS USING A NICKEL OXIDE HYDROXIDE MODIFIED PLATINUM ELECTRODE

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Electrochemical detection of active ingredients in pharmaceutical formulations plays a vital role in this era. Only few pharmaceutical formulations have been processing the electroanalytical techniques in detecting their active ingredients. In this study, we describe the characterization of a nickel oxide hydroxide modified platinum working electrode to detect acetylsalicylic acid in specified pharmaceutical formulations. The electrochemical technique, cyclic voltammetry has been used in the investigation of electro catalytic oxidation of acetylsalicylic acid on the modified surface. Cyclic voltammetric results clearly illustrate that in the presence of acetylsalicylic acid low valence nickel species shows an increase in anodic peak current follows by decrease in relevant cathodic peak current. This express that acetylsalicylic acid has been oxidized in relevant anodic peak current with redox mediators via an electro catalytic mechanism. Through cyclic voltammetry limit of detection of the modified electrode was calculated as 4.2 x $10^{-3}$ $kgm^{-3}$ and the amount of acetylsalicylic acid in pharmaceutical formulations of aspirin can be detected in the range of (0.2–15) x $10^{-3}$ M. Aspirin tablets are present with controlled release behavior plays a vital role in biochemistry. So the controlled releasing ability of delayed release aspirin tablets was also examined using cyclic voltammetry and successful results were obtained. This illustrates the ability of using nickel oxide hydroxide modified Platinum surface in alkaline medium for observing the controlled releasing behaviour of pharmaceutical formulations with delayed releasing ability. This method can be successfully applied in detecting acetylsalicylic acid in pharmaceutical formulations in medical industry.

***Keywords:*** *Acetylsalicylic acid, Cyclic voltammetry, Electro catalytic oxidation*