# *ABSTRACT*

*Acne vulgaris is a chronic inflammatory skin disease with a global prevalence of 9.48%, making it one of the most common dermatological conditions. Its main causes include sebaceous gland dysfunction influenced by androgen hormones, increased sebum fatty acids, follicular hyperkeratinization, altered colonization of Propionibacterium acnes, and inflammatory responses. Various treatment methods have been developed, both oral and topical, including acne patches that have gained interest for their improved comfort and safety. This study aims to analyze the effect of varying chitosan concentrations on the chemical characteristics and drug release behavior of patches based on PVA and salicylic acid. The patches were formulated using the electrospinning method with chitosan concentrations of 1%, 2%, and 3%. Characterizations were conducted using FTIR for chemical interaction analysis and UV-Vis spectrophotometry for drug release testing. FTIR analysis showed stable chemical interactions between PVA, chitosan, and salicylic acid, indicated by the emergence and shifting of absorption peaks for -OH, -$NH_2$, and C=O groups, confirming hydrogen bond formation. The 2% chitosan formulation exhibited the most stable spectrum, reflecting a chemically homogeneous structure. Drug release tests revealed that the 1% chitosan formulation caused a burst release, while the 3% formulation significantly hindered drug diffusion due to a denser matrix. The 2% chitosan formulation demonstrated the most balanced and sustained release profile over 24 hours. SEM analysis showed that the PVA 10% membrane had smooth and uniform fiber morphology, while the addition of 2% chitosan resulted in fibers with particle aggregates, affecting structural homogeneity and potentially reducing application comfort. Therefore, the PVA/AS/Ch_2% formulation is considered the most optimal for topical acne patch applications.*

**Keywords**: *Acne vulgaris, chitosan, electrospinning, PVA, salicylic acid*