

Project Title:

All-in-one smart dressing for digital management of diabetic wound

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Project Abstract/Proposal Summary:

Diabetic patients have impaired natural wound-healing capabilities, often forming chronic wounds that heal slowly. Approximately 15% to 25% of diabetic patients will develop diabetic foot ulcers in their lifetime. Traditional treatments for diabetic wounds are often unsatisfactory. Various wearable electronics have been used recently, but their performance can hardly meet the requirements of digital management due to the lack of synergetic integration of smart wound dressing materials. In this regard, this proposal aims to develop an all-in-one smart dressing for the digital management of diabetic wounds based on the integration of enzyme-functionalized smart materials and printed flexible electronics to stimulate tissue regeneration and monitor the dynamic process of wound healing.