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Disposable and Biodegradable Biosensors

Faculty Member: Jonathan Claussen (Mechanical Engineering; jclauss@iastate.edu) and Carmen Gomes (Mechanical Engineering; carmen@iastate.edu)

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This research focuses on the development of disposable and biodegradable biosensors using a combination of 2D conductive materials and biopolymers with printing and laser annealing techniques. The developed biosensors will be fabricated, functionalized with biorecognition agents, and their performance tested to determine their limit of detection, concentration range, and sensitivity in the presence and absence of interferents and complex samples. Electrochemical and materials characterization techniques will be carried out. The durability of the biosensors will also be tested. REU interns may have additional ideas on analytes and materials that should be tested and will help create new disposable and biodegradable biosensors for health and environmental applications.

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