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### **Manufacturing of Wearable Sensors for Human Health and Performance Monitoring**

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Continuous monitoring of physiological and biological parameters is expected to improve performance and medical outcomes by assessing overall health status and alerting for life-saving interventions. Continuous monitoring of these parameters requires wearable devices with an appropriate form factor (lightweight, comfortable, low energy consuming and even single-use) to avoid disrupting daily activities thus ensuring operation relevance and user acceptance. Many previous efforts to implement remote and wearable sensors have suffered from high cost and poor performance, as well as low clinical and end-use acceptance. New manufacturing and system level design approaches are needed to make the performance and clinical benefits of these sensors possible while satisfying challenging economic, regulatory, clinical, and user-acceptance criteria. In this talk we will review several recent design and manufacturing efforts aimed at designing and building prototype wearable sensors. We will discuss unique opportunities and challenges provided by additive manufacturing, including 3D printing, to drive innovation through new designs, faster prototyping and manufacturing, distributed networks, and new ecosystems. We will also show alternative hybrid self-assembly based integration techniques for low cost large scale manufacturing of single use wearable devices.

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