

# Epidermal Sensors for Medical Diagnostics

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## Abstract

Epidermal bioelectronic devices show great promise in healthcare due to their ability to provide longitudinal monitoring as well as on-demand delivery to maintain optimal health status and evaluate patients' physical conditions. Epidermal biosensors are at the center of this effort and offer a vast potential to revolutionize conventional diagnostics that uses traditional laboratory tests-based evaluations, usually called 'clinical labs,' that are slow and mainly require in-person visits and frequent invasive sampling if the long-term analysis is necessary. In this presentation, I will give a brief overview of our recently developed epidermal diagnostic approaches targeting various metabolites, hormones and microorganisms as well as some of skin physical and chemicals parameters to acquire better knowledge on early diagnosis and disease progression particularly for metabolic diseases and infections. This talk will summarize how to design epidermal sensors, integrated electronics and how to use them in clinical setting with our unique access to patient materials, which creates an unprecedented opportunity to address fundamental questions in medical diagnostics.[1]

## References

- [1] N. Poursharifi, M. Hassanpouramiri, A. Zink, M. Ucuncu, O. Parlak, *Advanced Materials* (2024) 2403758.