

Abstract Submitted
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Fabrication of Wearable Sensors for Human Health Monitoring through Magnetically Directed Assembly Techniques¹ AZAR ALIZADEH, JEFFREY ASHE, MATTHEW MISNER, YANZHE YANG, SHENG ZHONG, MING YIN, JOLEYN BREWER, JASON KARP, GE Global Research — Many previous efforts to modify patient monitors for remote or wearable use have suffered from high cost, poor performance, and low medical acceptance. A new technology approach is needed to enable these clinical benefits and to satisfy challenging economic, clinical, and user-acceptance criteria. Here, we present results on our initial efforts aimed at designing and building a prototype multi-wavelength arrayed photoplethysmograph (PPG) by using magnetically directed self-assembly (MDSA). We will discuss novel approaches in magnetic nanomaterial design, synthesis and deposition to enable MDSA based manufacturing. We will also demonstrate that multiple devices can be deposited through heterogeneous MDSA. The novel MDSA technology could make such PPG sensors a reality.

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