

Oregon collaborative group demonstrates early-stage feasibility of printing layers of CGM sensors – March 25, 2015 -- Collaboration with Pacific Diabetes Technologies to develop a dual-function glucose sensing and insulin delivery catheter (summary below; journal [article](#)).

Researchers at Oregon State University (OSU) and Pacific Diabetes Technologies have demonstrated the early-stage feasibility of “additive manufacturing” (printing) as a novel technique to fabricate certain layers of continuous glucose sensors. This technique is similar in process to that used in inkjet printing, in order to create thin membranes made of enzymes (including glucose oxidase). The work [has been published](#) in the *ECS Journal of Solid State Science and Technology* and shows that the preliminary system (human testing to come “soon”) is able to obtain a linear response for glucose concentrations up to 32 mM *in vitro*. This research represents an ongoing collaboration between OSU and Pacific Diabetes Technologies (Portland, OR) to develop a unified dual-function glucose sensor and insulin delivery catheter (for use in closed-loop systems). This group has been in stealth mode for some time though – we first heard about it at the [FDA/JDRF/NIH Workshop on Innovation Towards an Artificial Pancreas](#) in April 2013. The system is still very early stage (human accuracy and reliability has yet to be tested – very key), though the upside on the cost reduction side is notable. As a reminder, Medtronic has launched its MiniMed Duo in the EU, and Insulet is working on a CGM-integrated OmniPod, though both systems still require two insertions (co-located under the same patch). The World Economic Forum named additive manufacturing to its list of the top 10 emerging technologies of 2015. This particular form of printing is known as electrohydrodynamic printing. Though this CGM technology and manufacturing approach is still far away from impacting patients, we believe it is one to watch.