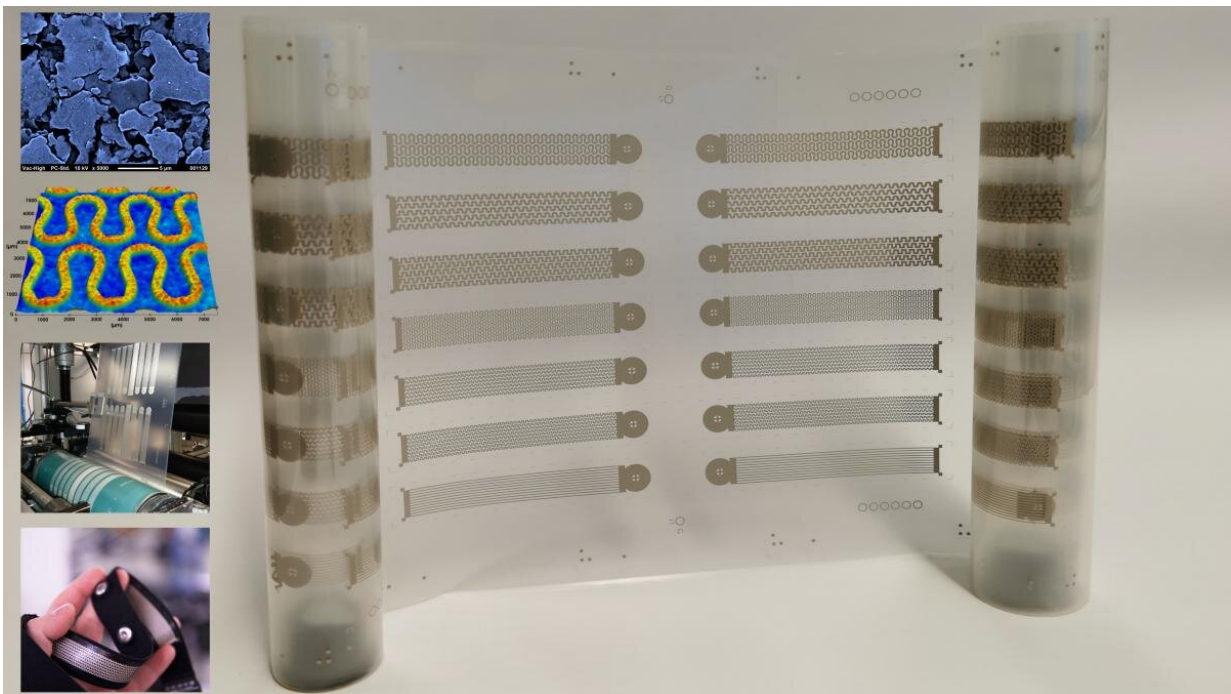


Printed flexible electronics—one step closer to smart clothing

July 2 2020



Credit: University of Oulu

The researchers of the University of Oulu, together with their partners from VTT Research Center and Polar Electro, developed a new system of electrodes that can be implemented into our clothing and withstand our daily routines.

"This work brings us one step closer to smart [clothing](#) ubiquity, where

our apparel, in addition to monitoring our health and surrounding environment, will be changing its appearance and properties accordingly to our wishes," says Adjunct Professor Rafal Sliz, the leader of this study.

The results published in the recent open-access issue of *npj Flexible Electronics* provide new insights into novel methods of fabrication of inexpensive and reliable electrodes that are essential for smart clothing.

"Roll-to-roll technology allows high-speed and large-area [printing](#) of the electronic subsystems analogously to newspaper printing processes," says Olli-Heikki Huttunen, VTT researcher that supervised the printing trials.

Prof. Sliz emphasizes another aspect of the study—the ability to implement the results to create sustainable smart clothing, where environmentally friendly and biodegradable materials can replace plastics and harmful substances.

"Although [electronic devices](#) have surrounded us for a long time, their applicability in clothing has been limited by inflexibility and vulnerability to changing conditions we face daily. This research shows how to resolve these limitations and improve our [everyday life](#)," says Professor Tapio Fabritius, a leader of the Optoelectronics and Measurement Techniques Unit, where the research has been conducted.

More information: Rafal Sliz et al. Reliability of R2R-printed, flexible electrodes for e-clothing applications, *npj Flexible Electronics* (2020). [DOI: 10.1038/s41528-020-0076-y](https://doi.org/10.1038/s41528-020-0076-y)

Provided by University of Oulu

Citation: Printed flexible electronics—one step closer to smart clothing (2020, July 2) retrieved 23 April 2024 from <https://techxplore.com/news/2020-07-flexible-electronicsone-closer-smart.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.