

## **Optical Sensor Array-based Multi-Channel Wearable Tonoarteriogram (TAG) Imaging System**

Zijun LIU

Ting XIANG, T. Xiang, N. Ji and Y.T. Zhang

Current blood pressure (BP) measurement devices based on one-dimensional sensing lack regional assessment capabilities to detect variations in BP distribution at different locations for comprehensive systematic BP assessment. To address this issue, we developed a multi-channel wearable BP visualization system - tonoartriogram (TAG) imaging system based on photoplethysmography (PPG) sensors that can generate PPG signal maps to detect BP distribution at different locations. The preliminary results showed the PPG signals on the wrist surface could be detected and visualized, revealing clear variations in local peripheral BP. Thus, the TAG imaging system could be potentially used to investigate PPG/BP distribution at different locations, achieving two-dimensional BP measurement with enriched information and could be applied to new generations of wearable BP devices.