

# Wearable Personalized Medicinal Platform

*A wearable personalized medicinal sensor that can prepare drug and vitamin dosages based on an individual's own body requirements*

Healthcare today is focused largely on 'one size fits all' treatments. Patients with different bodies but similar medical issues can be given identical medications and dosages.

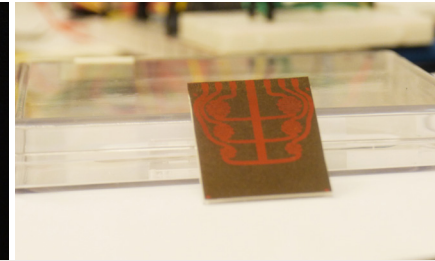
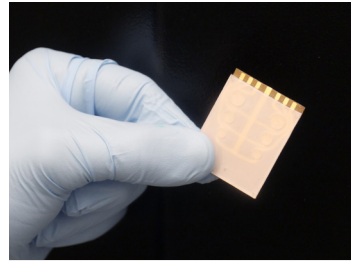
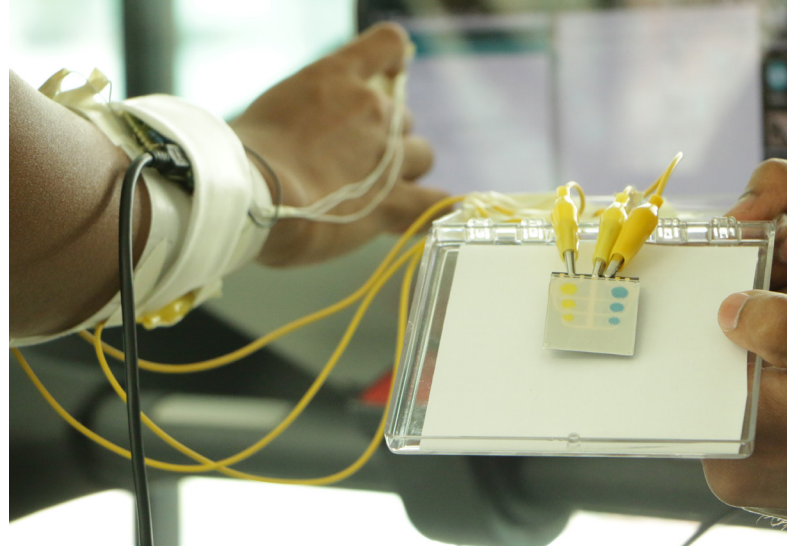
KAUST scientists have developed a wearable personalized medicinal platform that has the capability to prepare, vary and mix drugs, vitamins and minerals on demand using integrated wearable health sensors.

Personalization of the medication gives physicians the ability to use the patient's genetic information to guide selection of certain drugs or treatments for individuals, which can increase the possibility of a more effective and low-cost approach for clinical care.

Instead of 'one size fits all' treatment approaches for healthcare issues, the demonstrated system can prepare the drugs, vitamins and minerals instantly and in-situ depending on the needs of a person at any given time.

The developed system has the capability of mixing two or more different drugs with different dosages on demand or with external stimuli through wearable body sensors.

## TECHNOLOGY OPPORTUNITY



## Benefits

- ▲ **Personalized:** Get the needed supplement and dosage based on your own individual requirements
- ▲ **User friendly:** Can be used by user-activated schemes or autonomous triggering

## Applications

- ▲ Sports and consumer healthcare
- ▲ Clinical use
- ▲ Electronic skin
- ▲ Health monitoring

## Technology Details

This technology fuses microfluidics, complementary metal oxide semiconductor (CMOS) technology-based integrated wearable sensors, high performance flexible CMOS chips, wireless components and batteries to form a single portable platform.

### How It Works

It has the ability to prepare drugs on demand using a thermally expandable polymer composite to mechanically pump predetermined portions of the drugs. Fluids come from different reservoirs and mix through the microfluidic channels. The personalized medicinal platform can operate not only by user-activated schemes, but in different modes such as autonomous triggering.

### Why It Is Better

The microfluidics-based wearable medicinal preparation platform can have a unique impact on global healthcare. The presented concept is novel and instead of focusing on 'one size fits all' treatments, it can prepare drugs, vitamins, and minerals depending on the needs of the individual. This is an unprecedented multi-disciplinary personalized healthcare opportunity.

### IP Protection

KAUST has a patent pending for this technology.

## Opportunity

This technology is part of KAUST's technology commercialization program that seeks to stimulate development and commercial use of KAUST-developed technologies.

Opportunities exist for joint development, patent licensing, or other mutually beneficial relationships.

## For More Information

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