

SELF-POWERED BLOOD COAGULATION CHIP FOR INR VALUE AND HEMATOCRIT DETERMINATION

Tech ID: 22146 / UC Case 2011-125-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,903,854	02/27/2018	2011-125

BRIEF DESCRIPTION

With the increased use of anticoagulant drugs comes a greater risk of life threatening side effects. Patient monitoring of blood coagulation levels can help curb these adverse side effect. Unfortunately, this practice is not widely used today due to the relatively high cost of personal coagulation monitors.

Researchers at the University of California, Berkeley have developed a low cost, point-of-test diagnostic chip to simultaneously determine blood coagulation time (INR Value) and hematocrit level – two indicators that can help determine if the correct dosage of anticoagulant medication is being taken. The chip is intended to be a simple, disposable device that can be cheaply mass fabricated using hot embossing or injection molding techniques. A finger prick volume of blood is placed at the inlet of the device and self-powered method within the device is used to drive the flow of whole blood. Both aspects of the device (INR and Hematocrit) are novel.

SUGGESTED USES

- » Self-management tool for people with chronic bleeding disorders or those who use oral anticoagulants as a long-term prophylaxis.
- » Monitors hematocrit level, which is indicative of the No. 1 side effect and cause of death of anticoagulants - hemorrhage. Current self-monitoring devices do not have the capability.

ADVANTAGES

- » Easily and cheaply mass produced
- » Is self-powered and disposable
- » Readout is indicated by designations on the platform with the inputted blood acting as the readout mechanism.
- » Beneficial to physicians in the developing world and resource-limited areas.

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Portable Fluidic Actuation](#)
- ▶ [Mobile Molecular Diagnostics System](#)

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OTHER INFORMATION

CATEGORIZED AS

- » [Medical](#)
- » [Diagnostics](#)

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