



# IIT MADRAS

Indian Institute of Technology Madras

Technology Transfer Office  
TTO - IPM Cell



## Industrial Consultancy & Sponsored Research (IC&SR)

### A 3D DEVICE FOR MULTIPLE COLORIMETRIC DETECTIONS IITM Technology Available for Licensing

#### Intellectual Property (Design)

**IITM IDF Ref. 2195;**  
**Design No: 345721-001 (Granted);**  
**Class- 10-04**

#### Technology/IP Category/ Market

**Design:** 3D device for multiple colorimetric detections;

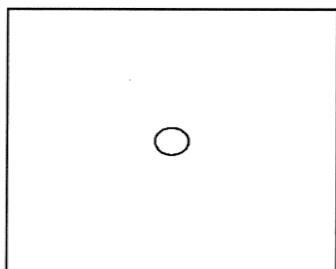
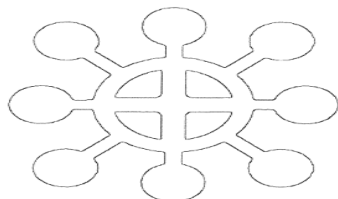
**Industry:** Food & Drugs, Special Needs, water treatment;

**Applications:** Food & Drugs, Special Needs, water treatment;

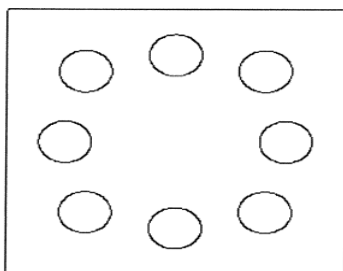
**Market:** The global 3D sensors market is projected to reach **\$11.64B by 2027**, growing at a CAGR of **27.45%** during the forecast period (2022-2027).

#### Design

- Present Design describes **3D device for multiple colorimetric detections**. Further, the 3D design of a paper-based microfluidic device is to perform multiple colorimetric detections and packaging thereof. The different shape & different view of the 3D device is illustrated hereinbelow.

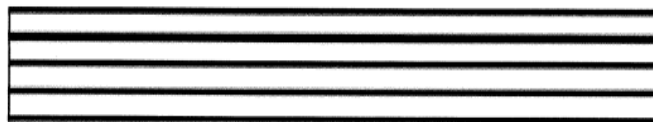


TOP VIEW

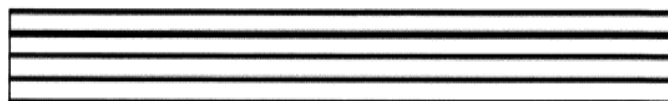


BOTTOM VIEW

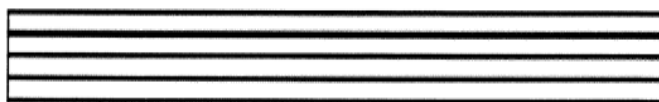
#### Images



LEFT SIDE VIEW



RIGHT SIDE VIEW



REAR VIEW



PERSPECTIVE VIEW

#### TRL (Technology Readiness Level)

**TRL-3/4**, Proof of Concept ready & validated;

#### Research Lab

**Prof. Pallab Sinha Mahapatra,**  
Dept of Mechanical Engineering

#### CONTACT US

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Phone: +91-44-2257 9756/ 9719

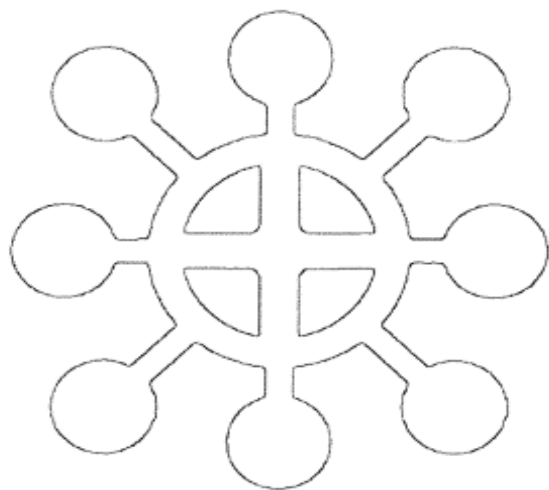
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#### Design

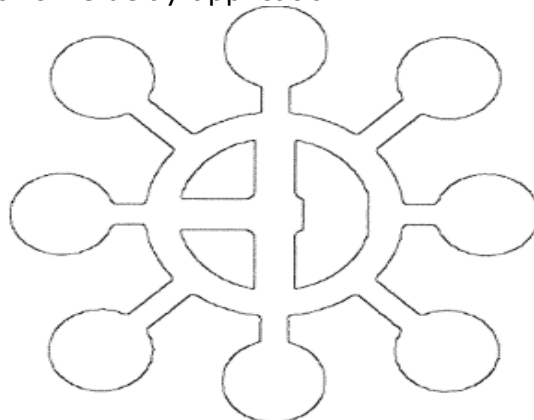
- Moreover, a three top view of middle component is shown hereinbelow.
- Fig.1** illustrates the top view of the top paper layer (internal structure). A representation of 8 detection zone is shown in the figure. By changing the radius of the ring tracks, the number of the detection zones can be altered.



**Figure-1**

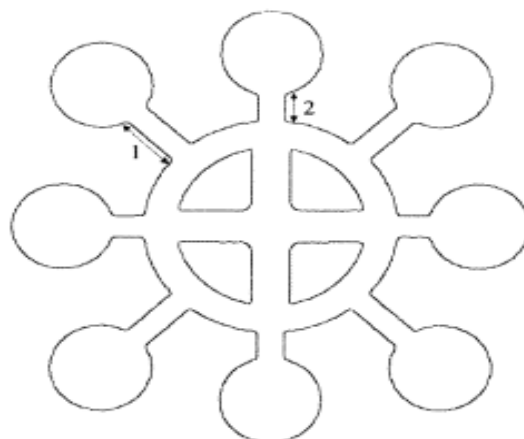
#### Additional Images

- Fig.2** illustrates the top view of the internal structure of the advance design for time delay application.



**FIGURE -2**

- Fig.3** illustrates the top view of the advance design (internal structure) for time delay application. Here 1 & 2 represent two different lengths secondary tracks. The length of 1 is more than the length of 2 so that the liquid will take more time to reach in the reaction zone via no 1 secondary track.



**FIGURE -3**

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