

國立台灣大學技術行銷表

台大案號: 06A-100402 (由產學組填寫)

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產品/技術名稱	利用多氣孔閥進行碟片上流體操控與實施螢光染色標定
發明人/單位	台大應用力學所 胡文聰, 陳貞伶, 楊正偉
產品/技術說明	<ol style="list-style-type: none"> 氣孔閥之操作係利用一環形上蓋控制碟片上之氣孔開閉,相較於其他常見的碟片閥門操作,不僅操作與製作簡單,且不受流體性質,材料表面性質影響。適合整合於碟片內,進行流體序列操控。 碟片內多螢光標定。可避免平台間的變換、人為操作步驟與誤差,並有潛力達成整個流程全自動化
應用範圍	<p>碟片型涉及流體序列操控之整合平台,例如碟片型 ELISA 樣品免疫標定處理</p> <p>免疫磁珠分離</p> <p>血液內稀有細胞之收集與檢測</p>
產品/技術優勢	<ol style="list-style-type: none"> 該氣孔閥不僅操作與製作簡單,且不受流體性質,材料表面性質影響。適合整合於碟片內,進行流體序列操控。 從磁珠標定後之微粒分離至目標微粒螢光標定完成,全整合在同一平台上,不僅可避免平台變換及相關操作誤差外,並可使整個流程全自動化
市場潛力	
產品/技術 智財權保護方式	(由技轉組填寫)

Marketing Abstract of NTU's Invention Disclosure

NTU's docket no: _____ (由技轉室填寫)

TTO contact : _____ Tel : _____ e-mail : _____

Title	Capture of microparticles and fluorescence labeling in a microfluidic disk via multi-vent valves operation.
Inventor (s)	Andrew M. Wo, Chen-Lin Chen, Cheng Wei Yang
Brief Description	<p>Vent valves and vent control plate (VCP) are designed to control the sequential transfer of fluid on the disk. The operation of the vent valve by VCP is simple, fast and robust.</p> <p>Multi-fluorescence labeling processes on the disk are simple to achieve by the sequential transfer of the VCP.</p> <p>This work presents a microfluidic platform to detect target cells in an economical CD-based design. The disk device integrates immunomagnetic separation and multi-fluorescence labeling processes in the same platform.</p>

<p>Fields of Application</p>	<p>The vent valve can be applied to a CD-based disk. On disk immunofluorescence labeling is automated. The microfluidic disk is capable of separation and enumeration of rare cells from whole blood.</p>
<p>Advantages</p>	<p>The proposed valve is easy to produce because it does not require ultra-precise structures, local surface modifications -such as capillary or hydrophobic valve, and additional materials embedded in the disk for blocking the channels, i.e. wax or ferrowax valve. It is also compatible for bio-experiment and well suited for fully integrated lab-on-a- disk applications.</p> <p>The microfluidic disk is capable of separation and enumeration of rare cells with high throughput and high sensitivity. All process is to decrease multiple manual preparatory steps.</p> <p>This disk would also be applicable to many rare cell detection scenarios with distinct immunological features, such as stem cell detection and prenatal diagnosis.</p>
<p>Market Potential</p>	
<p>IP Right(s)</p>	<p>(由技轉室填寫)</p>