台大案號: 06A-090701

國立台灣大學技術行銷表

產品/技術名稱	手術用定位裝置及應用其之影像導航系統
發明人/單位	(1) 王兆麟、楊炳德、楊奇林/醫學工程學研究所 （2）王堯弘/台大醫院
產品/技術說明	追蹤器是電腦輔助手術導航系統中一個重要的裝置，它負責即時地擷取穿刺針在空間中的位置，讓影像系統得以顯示患者相對的斷層組織影像，達到精密定位的目的。本專利之主要目的係在提供一種藉由彼此平行的二移動機構，設計可輕易調整及定位手術器械之手術用定位裝置。由於平行機構的使用，讓追蹤器的體積減少至如一般手術器械大小，可直接置於患者身上，也補償了患者術中可能移動的問題。
應用範圍	微創手術器械、影像導航手術系統、醫療機械人產業
產品/技術優勢	目前常見的導航系統以光學式立體定位器與工業級機械手臂為追蹤器。此類裝置體積龐大，往往佔據了原本已經相當狹小跼蹐的手術空間。本專利之技術利用平行機構建構一微型手術追蹤器，可直接置於患者身上。讓微創手術器械如同一般的手術器械容易操作，進而加速微創手術的普及。
市場潛力	影像導航手術系統已漸漸為臨床醫師所接受，但與傳統手術相較，使用率仍相當低，其中重要的原因為系統過於龐大且操作過程過於繁複。本專利之技術提供的是一項微型化的技術，可讓3D 立體定位手術的器械，如一般手術器材的輕巧與容易上手，因而可打開一條通往普及 3D 手術的產業方向與市場。
產品/技術 智財權保護方式	(由技轉室填寫)

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Marketing Abstract of NTU's Invention Disclosure

Title	SURGICAL POSITION DEVICE AND IMAGE GUIDED NAVIGATION SYSTEM USING THE SAME
Inventor (s)	(1) Jaw-lin Wang, Been-der Yang, Chi-lin Yang/Institue of Biomedical Engineering (2) Yaw-hung Wang/ National Taiwan University Hospital
Brief Description	The tracking device is an essential component in the computer-aided surgical navigation system. It tracks the real-time position of the needle for displaying the corresponding anatomical images, leading to an accurate needle placement for the subsequent treatment. This patent discloses a dual parallel mechanism for a tracking device, enabling miniature configuration and easy manipulation. Due to the miniature size, the device can be directly placed above the surgical site, as such compensating patient movement during treatment.
Fields of Application	Minimally invasive surgical device, Image-guided surgical navigation system, Medical robot industry
Advantages	(when compared to the existing technologies) Currently, the two main tracking devices for the image-guided navigation system are the type of optical tracking device and industrial-grade robotic arm. However, their sizes are enormous for the crowded operation room. This patent innovates a miniature tracking device and can be directly placed on the patient. This miniature configuration can lead to an easy-to-manipulate surgical instrument and accelerate the prevalence of minimally invasive surgery.
Market Potential	The image-guided surgical navigation system is increasingly accepted by surgeons in clinical use; however, the usage is still of limited compared to the traditional procedure. The main reasons are their huge size and complex operation procedure. The miniaturization technique provided by this patent can make the advanced 3D surgical instrument as easy-to-use as the traditional simple surgical device. The technique can open a new era for 3D image-guided surgery and also lead to a new market for medical robot industry.
IP Right(s)	(由技轉室填寫)