以有機/無機奈米粒子偕同之超音波多重影像解析模組

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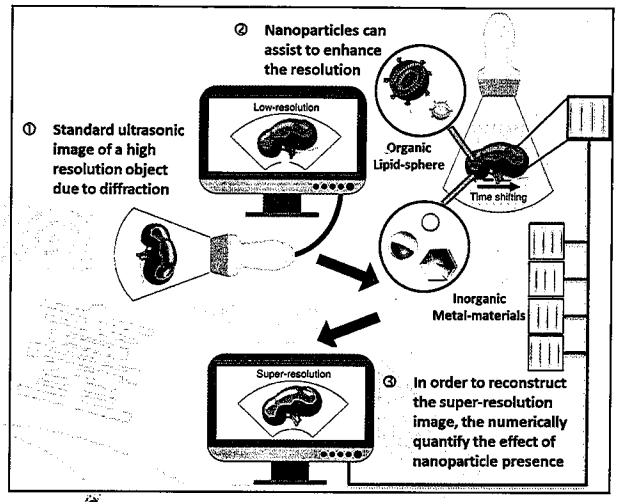

市場及需求: 該專利已完成奈米粒子合成之初步架構，並以目前熱門之有機與無機材料結合超音波生醫檢測分析，並已於中央研究院動物中心進行初步超音波檢體分析。透過本專利之執行，預計於 107 年 12 月底完成第一版超音波影像原型機，並於完成後至各醫療單位進行檢體測試。

技術摘要(含成果): 開發可以數字方式量化各種奈米粒子對超音波圖像產生影響之平台，'我們系統地將這些粒子發展成造影劑，並調整各種參數包括奈米粒子之材料本質，大小與濃度環境對比效果。該平台將偕同新型奈米粒子如有機球型脂質或無機金屬材料產生更高效之超音波成像。我們所購得之定制 Qisda / BenQ 便攜式超音波掃描儀將提供 原始超音波數據，以數字量化奈米粒子之存在並藉工程師對圖像軟件書寫修改，以實現各種優化後超音波數據收集。這種與奈米粒子偕同產生之超音波圖像分析模塊將成為未來深具潛力之新穎技術。

優勢: 開發成功超音波成像之具診斷性有機/無機奈米顆粒，利用台灣製造之商業超音波成像儀進行原始數據系統測量，並對各種奈米粒子之效果進行數值量化以建立平台，便於測量任何種類奈米粒子配方之粒子迴聲性。

競爭產品: 該儀器並無既有相關市場及廠商概況等資料；為了進行此類醫療器材之市場評估，本計畫將於執行時將進行產業研究，具體了解市場現況，精準規劃商品市場之定位。

專利現況:
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Ultrasonic multiple-image analysis module based on organic/inorganic nanoparticles

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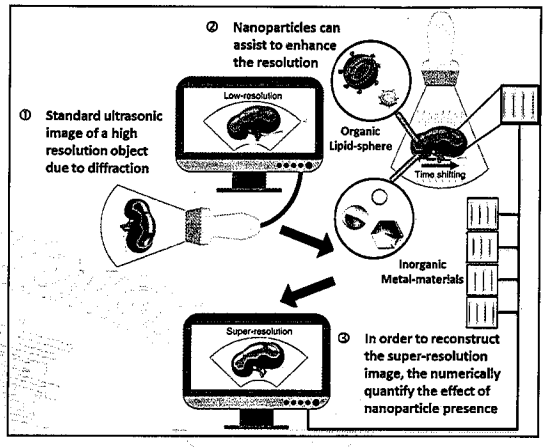

Market Needs: This patent has completed the preliminary structure of nanoparticle synthesis, combined the current popular organic and inorganic materials with ultrasonic biomedical detection and analysis system. It has carried out preliminary ultrasonic analysis at the Academia Sinica: Animal Center. Through the implementation of this patent, it is expected that the first version of the prototype ultrasound imaging machine will be completed by the end of Dec. 2018. After completion, the physical examination will be carried out at each medical unit.

Our Technology: To develop platforms where one can numerically quantify the effect of various nanoparticles on ultrasonic images, this contrast effect plan is to apply platform to novel nanoparticles such as organic lipid-sphere or inorganic metal-materials. We obtained customized Qisda/BenQ portable ultrasound scanner will provide raw data in order to numerically quantify the effect of nanoparticle presence on images software modifications by engineers to enable data collection. This ultrasonic image analysis module that cooperates with nanoparticles will become a technology with great potential in the future.

Strength: Developing organic and inorganic nanoparticles that can be successfully imaged with diagnostic ultrasound with raw data from Taiwan-manufactured commercial imager for systematic measurement. Then, building platform to facilitate measurement of particle echogenicity for any kinds nanoparticle formulation.

Competing Products: This instrument does not have relevant market and manufacturer profiles. In order to conduct the market evaluation of such medical devices, the project will conduct industrial research at the time of implementation, specifically understand the current market conditions.

Intellectual Properties: The patent is pending.

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