



角膜地形圖的形態判斷方法及形態判斷系統

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市場及需求： 角膜發生異樣需使用角膜地圖輔助診斷，但時間點往往是在醫師使用生物放大鏡檢測有所質疑之後，才使用此儀器輔助檢測。若患者有早期異樣，初期判斷則需仰賴醫師經驗，也因此許多疾病發現時已是中度患者，例如：圓錐角膜發病的時程很短，半年到一年的時間內演化急劇。此案的技術結合眼壓計，在門診第一線量測眼壓同時即可辨識角膜是否異樣，可補足急迫和醫師經驗不足的現況。

技術摘要(含成果)： 技術包含使用數學方法解構角膜邊界曲線，透過動態的模態分析技術，使角膜局部的缺陷得以突顯放大。放大技術可協助分類不同類型的角膜型態，並突顯動態行為下各型態的差異。

優勢： 技術成果可使第一線的眼壓量測器材，在眼壓吹氣施測過程中，同時也量測得角膜地圖型態。

競爭產品： 目前並無類似產品透過眼壓量測同時，可推估角膜地形圖型態。

專利現況：

(1)本技術已有相關專利（中華民國專利申請號:104142139，105108292；美國專利證號: US10332636B2，US10394928B2）。

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MORPHOLOGICAL DETERMINING METHOD AND MORPHOLOGICAL DETERMINING SYSTEM OF CORNEAL TOPOGRAPHY

PI : Prof. Po-Jen Shih

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Experience: The experience is shown in linking below:

http://bme.ntu.edu.tw/english/introduction/faculty/faculty_PoJenShih.php

Market Needs: Corneal topography is applied for diagnosis of corneal abnormalities, but the moment of application is after clinical doctors have doubt when checking with biomicroscopy. If the patient has early abnormalities, the initial judgments depend on the doctors' experience. Therefore, many diseases become moderate when the symptoms are discovered. For example, duration of keratoconus process is short, and cornea evolves sharply within six months to one year. The technology of this case combined with the tonometer at the first line of the clinic could measure not only the intraocular pressure but also identify whether the cornea was abnormal. It can supplement the current situation of urgency and inexperience of physicians.

Our Technology: The technique includes using mathematical methods to decouple the corneal boundary curve into several modes. Through dynamic modal analysis techniques, local defects in the cornea could be magnified. Magnification technology could help to classify different types of corneal patterns and highlight the differences among patterns under dynamic characteristics.

Strength: The technical results enable the tonometry equipment in the first-line to measure the corneal topography during the intraocular measurement.

Competing Products: At present, there is no similar product that can measure corneal topographic maps through intraocular pressure measurement.

Intellectual Properties: ROC patent No: 104142139 , 105108292 ; US patent No: US10332636B2 , US10394928B2) °

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