



陣列麥克風式風力發電機葉片檢測方法與設備

提案人： 吳文中 教授

單位： 國立臺灣大學 工程科學及海洋工程學系學系/研究所

簡歷： (可列出相關連結，例如系所、研究室網頁)

法國國立里昂應用科學學院(LGEF, INSA de Lyon)邀請訪問教授 2018/1, 2018/7 (兩個月)

法國卡尚高等師範學校(SATIE, ENS de CACHAN) 邀請訪問教授 2015/01~2015/02

台大工程科學及海洋工程學系教授 2014/8~

台大工程科學及海洋工程學系副教授 2010/08~2014/08

美國康乃爾大學機械航太系訪問助理教授 2007/08~2008/07

台大工程科學及海洋工程學系助理教授 2003/08~2010/08

台大應力所博士後研究 2003/02 -2003/08

市場及需求：

本專利應用於檢測風機葉片損傷與否。假若風機製造商與風場運維商不同公司，運維商不易取得部分風場資訊，葉片損害的狀況即為其中一項，因此擁有獨立的葉片檢測裝置有利於風場運維商對風場之管理，更能及早排程修補損壞之葉片避免風機嚴重損壞。

技術摘要(含成果)：

本技術為研發一附加設備直接安裝於風機塔柱側，包含訊號擷取、運算設備、無線傳輸，達成目標訊號之收集及分析結果，並發送至中控終端資料中心，該收集及診斷之過程不影響風機設備之營運。

優勢：

此技術所研發之設備建置成本低，可自動化一定時間區間內進行訊號收集並分析葉片的健康狀態。此技術可以降低技術人員高空作業之危險性及檢測之成本。

競爭產品：無

專利現況：

- (1) (1)本技術已有相關專利，中華民國專利編號：I573936 2017/03/11 中華民國專利申請號：105103697 風力發電機的葉片檢測方法與裝置 METHOD AND APPARATUS FOR DIAGNOSING BLADES OF WIND TURBINE

聯絡方式(請不用填)：

臺大產學合作總中心

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METHOD AND APPARATUS FOR DIAGNOSING BLADES
OF WIND TURBINE WITH MICROPHONE ARRAY

PI : Prof. Wen-Jong Wu

Department of Engineering Science and Ocean Engineering, National Taiwan U.

Experience:

Current position and relevant experience

8/2015 – present: Deputy Director, Yen Tjing-Ling Industrial Research Institute, National Taiwan University

1/2015 – 2/2015: Professeur Invite, Satie Lab, ENS de CACHAN, Cachan France

2/2010 - present: Associate editor, Smart Materials and Structures, Institute of Physics (IoP)

8/2014 - present: Professor, Department of Engineering Science and Ocean Engineering National, College of Engineering, National Taiwan University, Taipei, Taiwan

8/2010 - 8/2014: Associate Professor, Department of Engineering Science and Ocean Engineering National, College of Engineering, National Taiwan University, Taipei, Taiwan

8/2007 - 8/2008: Visiting Assistant Professor, Sibley School of Mechanical and Aerospace Engineering, College of Engineering, Cornell University, NY USA

8/2003 - 8/2010: Assistant Professor, Department of Engineering Science and Ocean Engineering National, College of Engineering, National Taiwan University, Taipei, Taiwan

Market Needs:

O&M data are sensitive data to turbine production company. For those maintenance companies differ from production companies, these data are hardly to gain for it. With numerous installations of wind turbine either on-shore or off-shore type, bunch of blades need to be monitored and analyzed for preventing damage heavily.

Our Technology:

One add-one device that can be installed beside the turbined rod and capture the signal then analyze the health condition of turbine blades. Turbine do not need to be halted for diagnosis.

Strength:

This device and diagnosis method can replace operation cost for technicians under high risk working condition. Also, our device can be easily replaceable.

Competing Products: No

Intellectual Properties: R.O.C. Pat. I573936

Contact (do not need to fill out):

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