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# 臺灣大學應用力學研究所
## 演 講 公 告

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主 講 人：林泰吉主任

　　　　　中正大學晶片系統研究中心

講　　題：構音異常音訊轉換系統晶片

主 持 人： 陳國慶所長

時　　間： 110年12月6日（星期一）下午2時20分開始

地　　點： 臺灣大學應用力學研究所國際會議廳

☆☆ 歡 迎 聽 講 ，敬 請 張 貼 ☆☆

# 構音異常音訊轉換系統晶片

林泰吉主任
中正大學晶片系統研究中心

演講摘要：

This talk will brief the first dysarthric voice conversion system on a chip (SoC) developed in National Chung Cheng University, which can translate stroke patients' voice into more intelligible and clearer speech in real time. The SoC is composed of a RISC-V MPU and a compact DNN engine with a single 16-bit multiply-accumulator, which improves $12\times$ performance and $> 100\times$ energy efficiency, and has been implemented in 40nm CMOS. The silicon area is $0.68\times0.79$mm2, and the measured power is 18.4mW for converting 3-sec dysarthric voice within 0.5 sec (at 200MHz and 0.8V) and 4.8mW for conversion $< 1$ sec (at 100MHz and 0.6V).

簡歷：

Tay-Jyi Lin （林泰吉）received the B.S. degree in electrical and control engineering and the Ph.D. degree in electronics engineering from National Chiao Tung University (NCTU), Hsinchu, Taiwan, in 1998 and 2005, respectively. He was with the Microelectronics and Information Systems Research Center, NCTU, as a Researcher Assistant Professor, from 2006 to 2010. In 2010, he joined the Department of Computer Science and Information Engineering, National Chung Cheng University, Chiayi, Taiwan, where he is currently an Associate Professor. His current research interests include variation-resilient and ultralow voltage system/architecture design, programmable system-on-a-chip architectures with heterogeneous MPU/DSP/accelerators, and system design for health care applications.