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[\[科技動向\] 臺大SOC論文在2009年IEEE ISSCC國際會議蟬聯世界大學第一名](#)

[科技動向] 臺大SoC論文在2009年IEEE ISSCC國際會議蟬聯世界大學第一名

[IEEE ISSCC國際會議 \(International Solid-State Circuits Conference \)](#) 自

2005開辦迄今，臺大獲選之論文已連續五年蟬聯全世界學術界排名第一。2009年國際固態電路研討會IEEE ISSCC於2月8-12日於美國加州舊金山舉行，該研討會為全球先進固態電路領域研發趨勢的重要指標，也是半導體產業發展的主流趨勢。此次ISSCC 2009共有204篇論文獲選，其中台灣有18篇論文，佔全球獲選論文數9%。臺大在ISSCC 2009共獲選10篇論文，在全世界大學排名第一。

臺大獲選之論文主要以有線傳輸方面發表最多，論文主題包含65奈米製程高頻96GHz鎖相迴路技術 (PLL, Phase-Locked

Loop)、65奈米製程鎖相迴路的漏電壓壓制技巧、130GHz頻率除頻器、20Gbps全速率線性時脈資料回復 (CDR, Clock Data Recovery)、超低雜訊時脈產生器與毫米波多模頻率除頻器；另外在無線領域的有60GHz傳收機系統晶片；數位方面有HDTV影像編碼器與用於生醫的數位處理器；以及應用於醫藥傳輸之系統晶片。ISSCC

2009以「Adaptive Circuits and Systems」為論述主軸，主要探討半導體技術在奈米領域持續進步，無論是從信號處理、資料儲存、到微耗電與無線通訊系統，相關電子電路系統的複雜度持續增加，加上近年整合系統晶片越來越普及的狀況下，使得一顆系統晶片在整合各個子電路後的電晶體將達到十億個以上，在現今全世界提倡節能的運動之下，無論從低耗電量、可信賴度或是各個子系統之間的調整考慮，可適應性的線路系統架構將提供了一個能在動態上隨時可以調整系統積體電路晶片可操作的參數，以達到最佳的效能與功率消耗。

資料來源：

[臺大校園焦點第八十期](#)

[Sci-Tech Dynamics] Taida's SOC Articles in IEEE ISSCC 2009 Wins Champion Again

[Since IEEE ISSCC, International Solid-State Circuits Conference](#), was first held in 2005, Taida has continued to win the first place for five years. IEEE ISSCC 2009 took place at San Francisco on 8th-12th in February. The conference is one significant indication of global development of advanced solid-state circuits and semiconductor industries. ISSCC 2009 accepted 204 articles, among which 18 (9%) are from Taiwan. Taida has been accepted 10 articles this time, ranked the first among the universities in the world.

The topics of Taida's accepted articles this year includes 96GHz PLL (phase-locked loop) in 65nm CMOS, the electric leakage pressing of PLL in 65 nano-process, 130GHz frequency divider, 20Gbps full-rate CDR (clock data recovery), and a low-noise active balun with IM2 cancellation for multi-band portable DVB-H receivers. Besides, in the wireless field is one article about 60 GHz single-chip transceiver, in the digital field one about HDTV applications and one about biomedical SoC. ISSCC 2009's theme is "Adaptive Circuits and Systems" discussing the continuation of semiconductor technology in the field of nanotechnology from the perspectives such as signal management, data store, micro-consumption and wireless communication systems etc. The complexity of relevant circuits gets exaggerated, upon which is added that integrated SoC gets more popular, so that one single SoC can contain more than a billion transistors. To meet the current trend of energy-saving, adaptive circuit and systems, due to the flexibility of their operational factors, can help with performance optimization and consumption reduction, no matter with the perspective of consumption economization, circuit reliability or the integration among subsystems.

Reference:

[National Taiwan University- Spotlight 80](#) (in Chinese)

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