新一代高性能智慧數字傳感芯片解決方案

Next Generation High Performance Smart Digital Sensing Chip Solutions

摘要 Summary

高智慧和普適（ubiquitous）的感測器是電子產業的未來。這些普適的感測器為人工智慧處理中心收集即時的數據。本研究項目旨在開發新一代的感測晶片，為感測器賦予更多的智能，更高程度的融合，更好的性能。項目團隊由香港科技大學的研究人員和香港科技大學創辦的初創公司「原子半導體（AtomSemi）」組成。該團隊一直站在感測晶片的研究和工業前沿。「原子半導體」已經成功開發了三個系列的晶片產品，惠及多個行業的物聯網電子客戶，涵蓋消費、醫療、工業和 ICT 市場。

Intelligent and ubiquitous sensor is the future of the electronic industry. These ubiquitous sensors collect real-time data for AI processing centers. This project aims to develop a new generation of sensing chips to enable sensors with more intelligence, higher-level of integration, better performance. The project team is formed by HKUST researchers and the HKUST-originated start-up company, AtomSemi. The team has been in the research and industrial frontier of the sensing chip. AtomSemi has been successfully developing three families of chip products to a wide range of IoT electronic customers in consumer, medical, industrial, and ICT markets.

簡歷 Biography

首席研究員 Principal Investigator

袁杰教授是工學院副院長（研究及研究生教務），同時也是電子及計算機工程學系教授。袁教授的研究專長是混合訊號和感測器晶片設計。他的研究涵蓋了類比-數位轉換器（ADCs）、CMOS 成像感測器、穿戴式感測器、感測器資料傳輸、無線能量收集、整合生物細胞感測系統、混合生物/電化學感測技術等廣泛領域。袁教授已經發表了 100 多篇論文，經歷年來累計獲得超過 1 億港元的研究資助。在技術上，他曾擔任過多個電機電子工程師學會（IEEE）會議和期刊的主席和編輯。從 2020 年開始，袁教授創立了「原子半導體」。

Prof. George Jie Yuan is the Associate Dean of the Engineering (Research and Graduate Studies), and a Professor in the Department of Electronic & Computer Engineering. Prof. Yuan's research expertise is on mixed-signal and sensory IC design. His research has covered broad fields of analog-to-digital converters (ADCs), CMOS imaging sensor, wearable sensors, sensor telemetry, energy harvesting, integrated bio-cellular sensing systems, hybrid bio/electro-chemical sensing technology etc. Prof. Yuan has published 100+ papers, and has been granted HKD$100M+ projects. Technically, he has served as chairs and editors to various IEEE conferences and journals. From 2020, Prof. Yuan founded Atom Semiconductor.

負責人 Person-in-charge

陳俊杰先生目前擔任「原子半導體 （AtomSemi）」的香港總經理兼工程副總裁，自 2021 年加入該公司。陳先生在模擬混合訊號產品設計和產品開發方面擁有超過 20 年的經驗。在加入 AtomSemi 之前，他曾在 Marvell 半導體和芯凱電子科技等知名公司擔任重要管理職位。陳先生持有密歇根大學安娜堡分校電機工程碩士和學士學位。

Mr. Jenkin Chan is currently serving as the General Manager, Hong Kong, and VP of Engineering at Atom Semiconductor, having joined the company in 2021. With over 20 years of experience in analog mixed-signal product design and development, Mr. Chan brings a wealth of expertise to his role. Before joining Atom, he held significant management positions at renowned companies such as Marvell Semiconductor and Kinetic Technologies. Mr. Chan holds a Master of Science (M.Sc.) and a Bachelor of Science (B.Sc.) in Electrical Engineering from the University of Michigan-Ann Arbor.

商品化進度 / 成熟程度 Commercialization Progress / Maturity

原子半導體科技有限公司

「原子半導體」是一家於 2020 年底由香港科技大學創立的初創公司。該公司專注於開發高性能的感測晶片和解決方案。公司擁有由晶片業界專家和博士畢業生組成的優秀技術團隊。「原子半導體」已經在穿戴式電子、工業電子和 ICT 電子領域開發了三個系列的感測晶片產品。這些晶片產品已經進入大規模生產，並在這些市場有主要客戶。原子半導體得到了兩間風險投資創投公司的投資。

Atom Semiconductor Technologies Limited

AtomSemi is a startup company incubated at HKUST in late 2020. The company focuses on developing high-performance sensing chips and solutions. AtomSemi has a great technology team formed by industry veterans and PhD graduates. It has been invested by two top venture capital (VC) firms. AtomSemi has developed three families of sensing chip products in areas of wearable electronics, industrial electronics, and ICT electronics. The chip products are in mass production and have major customers in these markets.

在這個研究項目框架下，團隊的目標是在醫療保健、機器人和能源領域開發整合高的感測器晶片。除了擴大晶片產品系列外，「原子半導體」亦計劃擴大晶片銷售。

Under this project framework, the project team aims to develop more integrated sensors in areas of healthcare, robots, and energy. Besides expanding the chip product family, AtomSemi also aims to expand the chip sales.