

# 台積電2022年產學合作計畫 徵求提案

截止日：2021-11-05

- 目的** 為邀請更多優秀學者參與半導體相關領域研究，台積公司擬公開徵求產學合作提案
- 對象** 國內各大學教授
- 方式** 若您對徵求提案之題目有興趣，歡迎填寫以下連結表單，我們會再寄送詳細資訊給您。  
**表單填寫截止日：即日起至2021年10月6日(含)止**
- 表單連結** <https://bit.ly/3kSqynC>
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## 免責聲明:

- 產學合作主題及其詳細資訊屬於台積公司智慧財產，僅供有興趣之教授申請台積電2022年產學合作計畫之個人使用，不得移作其他用途。
- 教授申請之產學合作計畫提案不可包含機密資訊；申請教授同意產學合作計畫提案不包含機密資訊，僅供台積公司內部產學合作計畫審核使用。

# 台積電2022年產學合作計畫 題目

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Unleash Innovation

- 1 TSV loop charging reduction of SoIC for FEOL device I/O PID failure improvement
- 2 Polish wafer temperature distribution by different slurry fluid-field
- 3 Flow field simulation for EUV reticle and wafer defectivity improvement
- 4 Development of CIS characteristics monitor in WAT
- 5 Develop a new coating methodology or glue layer which can improve parts coating film adhesion on quartz parts
- 6 Stimulation plasma behavior and particulate motion to combine recipe machine auto learning
- 7 AlN/AlScN-based piezoelectric stack with multi-layered cantilevers
- 8 The on-TDDB mechanism research for the gate oxide breakdown mode and lifetime prediction of high voltage device (DDD-MOS, LDMOS)
- 9 The power loss and Vswing analysis with TCAD circuit-device mix-mode simulation for the H-S and L-S device in the buck circuit for different frequency operation
- 10 Simultaneous double-side routing
- 11 3D-ICs design partitioning and timing optimization
- 12 Computing architecture with Novel 3D Integration of compute and high-bandwidth memory for Machine Learning applications
- 13 Low voltage One-Time-Programmable (OTP) memory for HPC logic platform
- 14 Nano Diamond Abrasive to increase CMP productivity and performance
- 15 CMP slurry delivery system with zero agglomeration
- 16 Raman spectroscopy for non-destructive strain and defects measurements
- 17 Machine learning OCD with limited amount of references
- 18 Micro-arcing detection development for high density plasma etching process
- 19 To find a better methodology of defect sampling model through statistic and AI expertise
- 20 FINFET technology beyond 7nm - Novel Device Structure or WFM (Work Function Metal) film to avoid/minimize device impact by Oxidation
- 21 Lithography dissolution modelling
- 22 P-type channel TFT for monolithic 3D integrated BEOL CMOS
- 23 Novel doping in Hf-based FE film and optimum design of interfacial layer for high endurance operation
- 24 Optimization Ferroelectric(FE)/Oxide Semiconductor(OS) unit devices for high performance BEOL memory application
- 25 High order ECC codes
- 26 New many thread CPU architecture application base on large L3/system cache architecture of 3D IC
- 27 Binary Alloy
- 28 Nano-channels /air-gaps for nitrogen or other liquid cooling for stacks