



Unleash Innovation

台積電2024年產學合作計畫 徵求提案

完整提案截止日：2023-10-13

- 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2023年9月11日(含)止
- 表單連結** <https://bit.ly/3QXhY7w>
- 窗口** 王小姐 03-563-6688 #752-3579
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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2024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。

Serial number: 202309041738-7289000

台積電2024年產學合作計畫 題目

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- 1 探討二氧化矽薄膜接合強度之化學模式
- 2 The Figure of Merit of a Semiconductor Power Electronics Switch
- 3 Development of high-performance and high-reliability BCD devices for automotive and analysis of device degradation mechanisms.
- 4 CMOS Image Sensor White-Pixel Study
- 5 Silicon Photonics Optical Component Characterization and Performance Enhancement
- 6 Flicker & RTS noise improvement in analog FinFET device. High voltage FinFET device investigation for reliability improvement.
- 7 Low voltage Band Gap circuit development and design/process optimization
- 8 Cu-Cu Direct Bond Formation Mechanism and Solution
- 9 Dielectric-Dielectric Direct Bonding Fundamentals, Mechanism and Solutions
- 10 Heterogeneous Integration of Antenna in Package for Terahertz
- 11 High Thermal Conductivity Material on TIM1 Development
- 12 Composite resin system development for low Dk/Df passivation materials
- 13 Metallurgy study for bump with ultra-small CD
- 14 Positron Annihilation Spectroscopy Analysis for Atomic Scale Vacancy in Dielectric
- 15 Self-Alignment Direct Bonding Process Evaluation
- 16 Modeling Interconnect Capacitance via Machine Learning for NanoSheet and CFET Technologies
- 17 Interconnect thermal modeling and application for chip design
- 18 N55HV uDriver project BEOL SM qual performance improve
- 19 Rapid Thermal Anneal temperature monitor survey
- 20 Wafer Edge Profile tiling improved by different Top/Bottom ring design
- 21 To simulate fluid distribution during wafer processing to make vertical & lateral chemical etching rate difference
- 22 Isotropic & Controlled interfacial layer etching between sheet-sheet spacing
- 23 ALD Gd3Al5O12 (GAG) coating development with novel plasma erosion resistance
- 24 Influence of ion implantation and co-implantation on epitaxy growth of SiGe/SiP/SiAs on Si or SiP surface, TiSi formation and retardation of dopant diffusion
- 25 Process Charge In-situ Sensing Element/Circuit Development for PID and ESD Monitoring
- 26 PJ/Bit Optical Link Interconnect Technique for Next Generation HPC Application
- 27 New heteroepitaxy system for semiconductor manufacturing process on silicon substrate
- 28 A.I. modeling prediction of the effect of plasma gas on new materials' etching selectivity and profile control
- 29 Molecule layered deposited dielectrics for thermal management
- 30 BEOL-compatible (< 400oC) P-type Oxide Semiconductor FET Technology

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| 31 Magnetic Core Material for mmWave High-frequency Inductor | 34 Eagle eye development for small defect and tool abnormal detection | 37 Measurement Accuracy limitation study on Optical tool |
| 32 Ferroelectric (FE) / Oxide semiconductor (OS) high performance and endurance investigation for BEOL memory application | 35 Die bonder tooling (bonding tool) coating evaluation for lifetime prolong | 38 SI/PI and FOM analysis for advanced packaging from Electric Analysis team |
| 33 Novel pretreatment to make nano-scale Sn ball on EUV mask removable by AFM tip | 36 Plasma effect on metal oxide | 39 Superparamagnetic Nanoparticle Synthesis for High Frequency Inductor |

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