

# 台積電2023年產學合作計畫 徵求提案

截止日期：2022-10-14



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- 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2022年9月16日(含)止**
- 表單連結** <https://bit.ly/3AOYB71>
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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。

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# 台積電2023年產學合作計畫 題目

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- 1 Angstrom scale film modification and quality improvement by conformal plasma surface modification
- 2 Atomic level Interfacial and material engineering for Cu barrier/liner to achieve scattering-free high mobility Cu gap-fill
- 3 Atomic interfacial dipole and metal silicide-epitaxial engineering to achieve sub E-9 ohms.cm<sup>2</sup> contact resistivity
- 4 Band edge PMOS working function metal with new methodology on VFB tuning capability with EOT scaling control
- 5 Modeling parasitic RC network and thermal effect for complementary FET (CFET) technology
- 6 The keys to DTCO of 3DFabric: Evaluation methodologies for characterization of BEOL thermal properties and inductance modeling of interconnection
- 7 New conductor for low-R BEOL interconnect
- 8 Novel Gate Dielectric (IL/HK) with Ultralow EOT and Gate Leakage
- 9 Ultralow Contact Resistance for Better Device Driving Current
- 10 Vt Modulation by Ultrathin Layer with Work-function Metal or Dipole Incorporation
- 11 Low temperature gate stack for Ge pFET
- 12 Catalyst Assisted Electroless Plating for Seam-free Metallization
- 13 Chip Power Delivery Network Planning with IR, EM, and Routing co-Optimization
- 14 Mechanism, device & circuit solution for well to gate antenna charge effect
- 15 Ferroelectric FET Technology for High Density Memory
- 16 Ruthenium byproduct formation mechanism in CMP environment: Simulation model and quantification by photoluminescent spectroscopy
- 17 Electro-kinetic flow to improve cleaning at bottom of nano channel
- 18 Raman spectroscopy modeling for strain and composition analysis of GAA like structure
- 19 Machine learning Ellipsometry (OCD) defense mechanism
- 20 Green transformation: Investigation of recycling CMP process waste to meet TSMC commitment of net zero emissions by 2050
- 21 Double side tester development for advance package of silicon-photonics device
- 22 Fine Pitch and Low Temperature Polymer-Metal Hybrid Bonding for 3D Stacking
- 23 Study Surface/Interface Modification Chemistry on Filler Compound for Encapsulation Material
- 24 Low temperature solder development to replace SAC-based solder
- 25 Chip on wafer bonding strength evaluation with surface analysis
- 26 Chip-on-wafer direct bonding wave propagation analysis
- 27 Design and Development of Flat Optics (Metalenses) for Visible Light Applications
- 28 Approach to improve Carbon(C) implantation source lifetime and keep ion beam performance
- 29 Development of RF performance (RgAC, PAE, RF gm, Rfgain...etc) monitor at WAT
- 30 The metal contamination impact analysis for CIS pixel performance

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