

材料與分析科技探索計畫

115 年度新增計畫清單

計畫編號	總主持人	計畫名稱
AS-iMATE-115-11	吳茂昆	用于研究環境友善鋰（或鈉）離子電池的原位（Operando）系統開發 Development of Operando Systems to Investigate Eco-friendly Li(or Na)-ion Batteries
AS-iMATE-115-12	周家復	自駕單噴流三維電紡絲 (AJ-3D ES) 平台用於具心臟貼合性及形狀記憶之組織貼片以實現功能性心肌再生 Autopilot Single-Jet 3D Electrospinning (AJ-3D ES) Platform for Heart-Conforming, Shape-Memory Tissue Patches for Functional Myocardial Regeneration
AS-iMATE-115-13	林 新	結合第一原理與機器學習在拓撲材料中優化熱電性能 Integrating First-Principles and Machine Learning for Thermoelectric Optimization in Topological Materials
AS-iMATE-115-14	莊天明	探索磁性、集體電子序與相對論費米子的交互作用 Exploring the Interplay between Magnetism, Collective Electronic Orders and Relativistic Fermions
AS-iMATE-115-15	溫昱傑	氫氧根離子於空氣/水界面的空乏現象：來自動量解析式非線性光譜的新觀點 Hydroxide Depletion at the Air/Water Interface: A New Perspective from Momentum-Resolved Nonlinear Optical Spectroscopy
AS-iMATE-115-16	羅健榮	開發源自可型態轉化蛋白質絲的自適應材料 Development of Adaptive Materials from Transformable Protein Filaments
AS-iMATE-115-17	蘇維彬	利用場發射共振能譜術解析籠目晶格、單原子電荷轉移與邊緣態的原子尺度電荷分佈 Resolving Atomic-scale Charge Distributions in Kagome Lattices, Single-atom Charge Transfer, and Edge States Using Field Emission Resonance Spectroscopy
AS-iMATE-115-21	洪政雄	從紫質到單原子催化劑：在分子層級解鎖新世代永續催化材料開發 From Porphyrins to Single-Atom Catalysts: Unlocking Sustainable Catalysis at the Molecular Level
AS-iMATE-115-22	黃人則	智慧型中孔矽奈米粒子工程設計與腦部標靶蛋白質降解應用 Engineering Smart Mesoporous Silica Nanoparticles for Targeted Protein Degradation in the Brain

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AS-iMATE-115-31	王俊凱	金屬鹵化物鈣鈦礦相位穩定性的基礎研究 Fundamental Studies of Phase Stability of Metal Halide Perovskites
AS-iMATE-115-32	余慈顏	結構與功能導向的工業酵素設計：結合人工智慧與快速核磁共振技術 Structure-Function-Guided Design of Industrial Enzymes Using AI and Fast NMR Techniques
AS-iMATE-115-33	肖恩	超輻射光學原子鐘 Superradiant Optical Atomic Clocks
AS-iMATE-115-41	方牧懷	新穎多粒徑組合之固態電解質應用於高效固態電池 From Single-Size to Multi-Size Architectures: A Novel Strategy of Solid Electrolyte Design for High-Performance Solid-State Batteries
AS-iMATE-115-42	陳壁彰	研發多價離子交聯聚丙烯酸酯水凝膠增強機械力性能於擴張顯微術應用 Development of Multivalent Ion-Enhanced Polyacrylate Hydrogels for Robust Expansion Microscopy
AS-iMATE-115-43	董奕鍾	透過無標記多因素分析分泌生物分子實現類器官分化與培養的一致性 Consistent Organoid Differentiation and Culture via Label-Free Multiple-Factor Analysis of Secreted Biomolecules

註：以上計畫須俟本院 115 年法定預算案通過後始得執行。