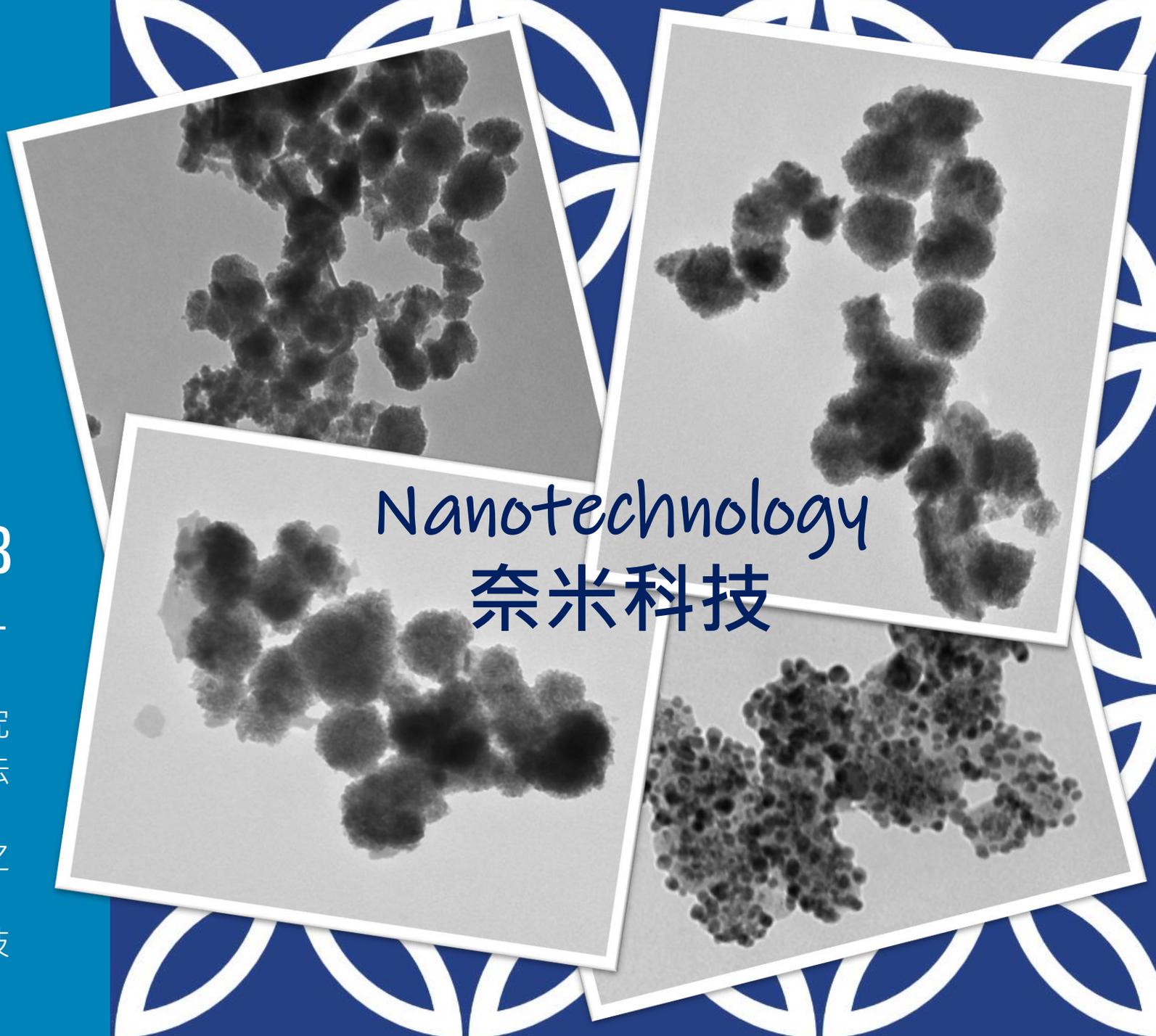


歡迎光臨 1502實驗室 WELCOME TO THE MAGNETIC NANOTECHNOLOGY LAB

本實驗室研究內容:

- (1) 奈米材料分散技術之建立與應用研究
- (2) 超磁性氧化鐵奈米顆粒在腫瘤溫熱法應用上之研究
- (3) 新型濕式珠磨設備在磁性奈米材料之分散研究
- (4) 高效率基因重組酵素純化與固定化技術之研究



Nanotechnology
奈米科技

本實驗室的成員

指導老師：江禎立 老師

歷屆研究生與專題生：

賴婉如、劉哲玟、謝林豐、黃琮琳、朱振豪、黃鈺方、黃崑保、陳凱祥、
方建仁、陳星豪、陸軍晏、蔡承祐；張銘浩、陳日霖、余成航、陳豐祥、
王聖璋、林冠宇、陳仕鑫...

本實驗室設備

核酸測定儀



傅立葉轉換紅外線光譜儀(FT-IR)



螢光分光光譜儀



破菌機



恆溫振盪培養箱



粒徑/介面電位分析儀



直立式高壓滅菌釜



本實驗室設備

超高速冷凍離心機



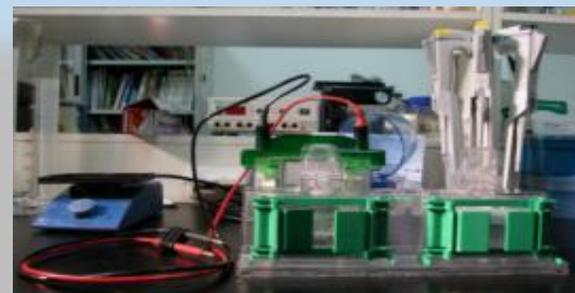
濕式研磨分散系統



水平電泳槽



垂直電泳槽



實驗室研究成果

- (1) 執行國科會計畫二件，計畫總金額 \$1,410,000元。
- (2) 執行產學計畫案一件，計畫總金額 \$380,000元。
- (3) 執行教育部產業園區產學合作計畫一件，計畫總金額\$720,000元。
- (4) 發表 SCI期刊論文 25篇；國內外研討會 26篇。
- (5) 碩士畢業生二位，一位升學攻讀國立大學博士班。
- (6) 101年南臺灣傑出博碩士論文校際發表競賽最佳論文發表獎。
- (7) 100年榮獲校慶學生專題製作比賽化工生技組第四名。
- (8) 100年榮獲台灣化學工程學會58週年年會壁報論文競賽佳作。

實驗室研究成果

A 期刊論文

- 1 S-W Chen, C-L Chiang*, C-L Chen*, 2012
The influence of nanoparticle size and external AC magnetic field on heating ability
Materials Letters, **67**, 349-351 (SCI)
(IF=2.120, RANK=51/225)
- 2 C-Y Chen*, C-L Chiang, L-B Lia, 2010
Adsorption of Cu(II) by a chelating resin containing 2-Acrylamidoglycolic acid
Journal of Southern Taiwan University, **35**, 51-60
- 3 S-W Chen, C-L Chiang, S-C Hsieh*, 2010
Simulating Physiological Conditions to Evaluate Nanoparticles for Magnetic
Fluid Hyperthermia (MFH) Therapy Applications
J. Magn. Magn. Mater., **322**, 247-252 (SCI)
(IF=1.690, RANK=77/225, Times Cited: 7)
- 4 C-L Chiang*, C-Y Chen, L-W Chang, 2008
Purification of Recombinant Enhanced Green Fluorescent Protein Expressed in Escherichia
coli with New Immobilized Metal Ion Affinity Magnetic Absorbents
Journal of Chromatography B, **864**, 116-122 (SCI) NSC 96-2214-E218-028
(IF=2.971, RANK=17/73, Times Cited: 15)
- 5 C-Y Chen*, C-L Chiang, 2008
Preparation of Cotton Fibers with Antibacterial Silver Nanoparticles
Materials Letters, **62**, 3607-3609 (SCI)
(IF=2.120, RANK=51/225, Times Cited: 36)

實驗室研究成果

A 期刊論文

- 6 C-Y Chen*, C-L Chiang, C-R Chen, 2007
Removal of Heavy Metal Ions by a Chelating Resin Containing Glycine as Chelating Groups
Sep. Purif. Techn., **54**, 396-403 (SCI)
(IF=2.775, RANK=14/135, Times Cited: 19)
- 7 C-L Chiang*, C-S Sung, C-Y Chen, 2006
Application of Silica-Magnetite Nanocomposites to the Isolation of Ultrapure Plasmid DNA from Bacterial Cells
J. Magn. Magn. Mater., **305**, 483-490 (SCI) NSC-92-2214-E218-001
(IF=1.690, RANK=77/225, Times Cited: 20)
- 8 C-L Chiang*, C-S Sung, 2006
Purification of Transfection-grade Plasmid DNA from Bacterial Cells with Superparamagnetic Nanoparticles
J. Magn. Magn. Mater., **302**, 7-13 (SCI) NSC-92-2214-E218-001
(IF=1.690, RANK=77/225, Times Cited:25)
- 9 C-Y Chen*, C-L Chiang, P-C Huang, 2006
Adsorptions of Heavy Metal Ions by a Magnetic Chelating Resin Containing Hydroxy and Iminodiacetate Groups
Sep. Purif. Techn., **50**, 15-21 (SCI)
(IF=2.775, RANK=14/135, Times Cited:17)
- 10 C-L Chiang*, C-S Sung, T-F Wu, C-Y Chen, C-Y Hsu, 2005
Application of Superparamagnetic Nanoparticles in Purification of Plasmid DNA from Bacterial Cells
Journal of Chromatography B, **822**, 54-60 (SCI) NSC-91-2214-E218-005
(IF=2.971, RANK=17/73, Times Cited:42)

實驗室研究成果

A	期刊論文
11	<p><u>C-L Chiang*</u>, 2001, Controlled Growth of Gold Nanoparticles in AOT/C₁₂E₄/Isooctane Mixed Reverse Micelles J. Colloid Interface Sci., 239,334-341 (SCI) NSC-88-2214-E218-001 (IF=3.068, RANK=40/127, Times Cited:41)</p>
12	<p><u>C-L Chiang*</u>, 2000, Controlled Growth of Gold Nanoparticles in Aerosol-OT/Sorbitan Monooleate/Isooctane Mixed Reverse Micelles J. Colloid Interface Sci., 230, 60-66 (SCI) NSC-88-2214-E218-001 (IF=3.068, RANK=40/127, Times Cited:20)</p>
13	<p><u>C-L Chiang*</u>, 1999, Activity and Stability of Lipase in AOT/Isooctane Reversed Micelles Biotechnology Techniques, 13, 453-457 (SCI) NSC-86-2214-E218-001</p>
14	<p><u>C-L Chiang*</u>, 1999, Separation of Cholesterol Esterase in Cloud Point Extraction System J. Chin. Inst. Chem. Engrs., 30, 171-176 (SCI) NSC-84-2214-E218-001</p>
15	<p>S.W. Tsai*, K.P. Lee and <u>C-L Chiang</u>, 1995, Surfactant Effect on Lipase-Catalyzed Hydrolysis of Olive Oil in AOT/Isooctane Reverse Micelles Biocatalysis and Biotransformation, 13, 89-98 (SCI)</p>
16	<p>S.W. Tsai*, H.J. Wei and <u>C.L. Chiang</u>, 1993, Action of Lipolytical Enzymes in Biphasic Organic-Aqueous Systems. II .Dynamics of the Irreversible Michaelis-Menten Reaction, Biotechnol. Bioeng., 41, 603-611 (SCI)</p>

實驗室研究成果

A 期刊論文

- 17 C.L. Chiang *and S.W. Tsai, 1992,
Mathematical Modeling and Simulation of a Recycle Dialysis Membrane Reactor in a Reversed Micellar System ,
J. Chem. Tech. Biotechnol., **54**, 249-255 (SCI)
- 18 C.L. Chiang *and S.W. Tsai, 1992,
Application of a Recycle Dialysis System in a Reversed Micellar Reactor
J. Chem. Tech. Biotechnol., **54**, 27-32 (SCI)
- 19 S.W. Tsai, G.H. Wu and C.L. Chiang, 1991,
Kinetics of Enzymatic Hydrolysis of Olive Oil in Biphasic Organic-Aqueous Systems
Biotechnol. Bioeng., **38**, 761-766 (SCI)
- 20 S.W. Tsai* and C.L. Chiang, 1991,
Kinetics, Mechanism, and Course Analysis of Lipase-Catalyzed Hydrolysis of High Concentration Olive Oil in AOT- Isooctane Reversed Micelles,
Biotechnol. Bioeng., **38**, 206-211 (SCI)
- 21 S.W. Tsai*, C.L. Chiang and H.M. Yeh, 1988,
Asymptotic Nusselt Numbers for Newtonian Flow through a Parallel-Channel with Recycle
Warme and Stoffubertrag , **23**, 179-181 (SCI)
- 22 H.M. Yeh*, S.W. Tsai and C.L. Chiang, 1988,
Effects of Recycle on Heat and Mass Transfer between Parallel-Plate Walls with Equal Fluxes
Int. J. Heat Mass Transfer, **31**, 1853-1860 (SCI)
- 23 H.M. Yeh*, S.W. Tsai and C.L. Chiang, 1987,
Recycle Effects on Heat and Mass Transfer through a Parallel-Plate Channel
AIChE J.,**33**, 1743-1746 (SCI)

實驗室研究成果

B	研討會論文
8	C.-L. Chiang*, C-Y Chen, 2008 Purification of Recombinant EGFP Proteins with New Immobilized Metal Ion Affinity Chromatography Magnetic Absorbents 14 th Symposium of Young Asia Biochemical Engineering community, YABEC'2008, Tokyo, Japan
9	C.-L. Chiang*, C-Y Chen, 2008 Development of High Efficiency Purification Method of Recombinant EGFP Proteins with New Immobilized Metal Ion Affinity Chromatography Magnetic Absorbents 2008 Taiwan /Korea /Japan Chemical Engineering Conference, Taipei, Taiwan, ROC
10	C.-L. Chiang*, C-Y Chen, 2008 Application of Superparamagnetic Nanoparticles in Purification of Plasmid DNA and Recombinant Protein from Bacterial Cells Second World Conference on Magic Bullets (Ehrlich II), Nürnberg, Germany (Invited)
11	江禎立*, 陳志彥, 林宗興, 張展育, 2007 SiO ₂ @Ag核殼奈米粒子之製備與近紅外線光熱轉換之應用 中國化工年會2007
12	陳世偉, 江禎立*, 2007 磁性奈米顆粒在腫瘤溫熱法應用之研究 第十二屆生化工程研討會
13	蘇微婷, 江禎立*, 2007 利用質體DNA組裝金奈米粒子 第十二屆生化工程研討會

實驗室研究成果

B	研討會論文
14	C.-L. Chiang*, C-S Sung, 2005 Application of superparamagnetic nanoparticles in purification of plasmid dna from bacterial cells 11 th Symposium of Young Asia Biochemical Engineering community, YABEC'2005, Beijing, China.(invited speaker)
15	C.-L. Chiang*, C-S Sung, 2005 Application of Superparamagnetic Nanoparticles in Purification of Plasmid DNA from Bacterial Cells Thirteenth Symposium on Recent Advances in Cellular and Molecular Biology
16	C.-L. Chiang*, 2004 Synthesis of Gold Nanoparticles in AOT/Span80/Isooctane Mixed Reverse Micelles 2004 International Symposium on Nano-Science and Technology.
17	C.-L. Chiang*, 2004 Applications of Superparamagnetic Nanoparticles in Isolation of Plasmid DNA Twelfth Symposium on Recent Advances in Cellular and Molecular Biology
18	C.-L. Chiang*, 2003 磁性奈米粒子的製備及其在生化分離上的應用 中國化工年會
19	C.L. Chiang*, 2002 Applications of Magnetic Nanoparticles for Protein Immobilization 中國化工年會

實驗室研究成果

B 研討會論文

- | | |
|----|---|
| 20 | C.L. Chiang*, 1999
Increment of Enzyme Stability in AOT/C ₁₂ E ₄ /Isooctane Mixed Reverse Micelles,
化學工程技術研討會 |
| 21 | C.L. Chiang*, 1999
Stability of Lipase in AOT/Isooctane Reversed Micelles,
Proceedings of The Fourth Conference on Biochemical Engineering, |
| 22 | C.L. Chiang*, 1998
Activity and Stability of Lipase in AOT/Isooctane Reversed Micelles,
中國化學年會 |
| 23 | C.L. Chiang*, 1996
Partition of Cholesteol Esterase in Detergent-based Two-Phase System,
7th APPCCChE Congress |
| 24 | C.L. Chiang*, 1994
應用循環式透析膜反應器於逆微胞酵素反應系統
第九屆技職研討會 |