

國立東華大學教師個人基本資料表

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學歷/畢業：Ph. D. Univ. of Alabama at Birmingham (1995)

現職/起迄：東華大學物理學系 教授 (2007.08)

研發處綜合企劃組 組長 (2004.08)

到任年月份(東華)：Aug. 1999

研究領域：電子自旋共振、金屬蛋白、催化反應機制

Ke Shyue Chu



■ SCI 期刊論文：

1. Sk Jahir Abbas, P.V.R.K. Ramacharyulu, Hsin-Hsi Lo, Sk Imran Ali, Shyue-Chu Ke*, *A catalytic approach to synthesis of PLP analogs and other environmental protocols in a single handed CaO/TiO₂ green nanoparticle*, **Applied Catalysis B: Environmental**, 210, 276–289 (2017)
2. Md. Hussain Basha, Neeruganti O. Gopal, Dipak B. Nimbalkar, Shyue-Chu Ke, *Phosphorus and boron codoping into TiO₂ nanoparticles; an avenue for enhancing the visible light photocatalytic activity*, **J Mater Sci: Mater Electron**, 28, 987–993 (2017)
3. Hsin-Hsi Lo, Hsin-Hua Lin, Amarendra N. Maity, and Shyue-Chu Ke*, *The Molecular Mechanism of the Open-Closed Protein Conformational Cycle Transitions and Coupled Substrate Binding, Activation and Product Release Events in Lysine 5,6-Aminomutase*, **Chemical Communications**, 52, 6399 (2016)
4. Dipak Bapurao Nimbalkar, Hsin-Hsi Lo, P.V.R.K. Ramacharyulu and Shyue-Chu Ke*, *Improved photocatalytic activity of RGO/MoS₂ nanosheets decorated on TiO₂ nanoparticles*, **RSC Advances**, 6, 31661 (2016)
5. Sk Jahir Abbas, P.V.R.K. Ramacharyulu, and Shyue-Chu Ke*, *MnO₂/TiO₂ Catalyzed Synthesis of Coenzyme Pyridoxamine-5'-Phosphate Analogues: 3-deoxy pyridoxamine-5'-phosphate*, **RSC Advances**, 6, 10242 (2016)
6. Jine-Yung Huang, Yi-Fang Chiu, Hsing-Ting Wang, Tien-Sheng Tseng, Shyue-Chu Ke, Mercedes Roncel, and Hsiu-An Chu*, *Mutations of cytochrome b559 and PsbJ on and near the QC site in photosystem II influence the regulation of short-term light response and photosynthetic growth of the cyanobacterium Synechocystis sp.*, **Biochemistry**, 55, 2214 (2016)
7. Prasad B. Daruka*, Nagabhushana H.*, Thyagarajan K, Sharma S. C., Shivakumara C., Gopal N. O., Nagabhushana B. M., Ke Shyue-Chu, Chakradhar R. P. S., Prabhakara K.R., *Incorporation of Cr³⁺ ions in tuning the magnetic and transport properties of nano zinc ferrite*, **J. Alloys and Compounds**, 657, 95 (2016)
8. P.V.R.K. Ramacharyulu*, Dipak B Nimbalkar, J. Praveen Kumar, G.K. Prasad*, Shyue-Chu Ke*, *N-doped, S-doped TiO₂ nanocatalysts: Synthesis, Characterization and Photocatalytic Activity in Presence of Sunlight*, **RSC Advances**, 5, 37096 (2015)
9. Amarendra N. Maity, Hsin-Hua Lin, Hsiang-Sheng Chiang, Hsin-Hsi Lo, Shyue-Chu Ke*, *The Reaction of PLP-NO with Lysine 5,6-Aminomutase: Enzyme Flexibility towards*

- Cofactor Analog*, **ACS Catalysis**, 5, 3093 (2015)
10. Amarendra N. Maity, Shyue-Chu Ke*, *4'-CyanoPLP Presents Better Prospect for the Experimental Detection of Elusive Cyclic Intermediate Radical in the Reaction of Lysine 5,6-Aminomutase*, **Biochemical and Biophysical Research Communications** 457, 161, (2015)
 11. Amarendra N. Maity and Shyue-Chu Ke*, *Large-Scale Domain Motions and Pyridoxal-5'-Phosphate Assisted Radical Catalysis in Coenzyme B12-Dependent Aminomutases*, **Int. J. Mol. Sci.** 15, 3064 (2014)
 12. Hsin-Hsi Lo, Neeruganti O. Gopal, Shiann-Cherng Sheu, Shyue-Chu Ke*, *Electron Paramagnetic Resonance Investigation of Charge Transfer in TiO₂(B)/Anatase and N-TiO₂(B)/Anatase Mixed-Phase Nanowires: The Relative Valence and Conduction Band Edges in the Two Phases*, **Journal Physical Chemistry C**, **118**, 2877 (2014)
 13. Shu-Hsiang Huang, Shyue-Chu Ke, Ta-Hsin Lin, Hsin-Bin Huang, Yi-Cheng Chen*, *Effect of C-Terminal Residues of A β on Copper Binding Affinity, Structural Conversion and Aggregation*, **PLoS One**, 9, 90385, (2014)
 14. Prasad BD, Nagabhushana H, Thyagarajan K, Nagabhushana BM, Jnaneshwara DM, Sharma SC, Shivakumara C, Gopal NO, Ke SC, Chakradhar RPS, *Magnetic and dielectric interactions in nano zinc ferrite powder: Prepared by self-sustainable propellant chemistry technique*, **Journal of magnetism and magnetic materials**, 358, 132 (2014)
 15. Premkumar HB, Sunitha DV, Nagabhushana H, Sharma SC, Prasad BD, Nagabhushana BM, Shivakumara C, Rao JL, Gopal NO, Prabhakara KR, Ke SC, Chakradhar RPS, *Synthesis, structural and thermoluminescence properties of YAlO₃:Dy³⁺ nanophosphors*, **Journal of alloys and compounds**, 591, 337 (2014)
 16. Prasad BD, Nagabhushana H, Thyagarajan K, Nagabhushana BM, Jnaneshwara DM, Sharma SC, Shivakumara C, Gopal NO, Ke SC, Chakradhar RPS, *Temperature dependent magnetic ordering and electrical transport behavior of nano zinc ferrite from 20 to 800 K*, **Journal of alloys and compounds**, 590, 184 (2014)
 17. Amarendra N. Maity and Shyue-Chu Ke*, *5-Fluorolysine as alternative substrate of lysine 5,6-aminomutase: A computational study*, **Computational and Theoretical Chemistry**, 1022, 1 (2013)
 18. Yung-Han Chen, Amarendra N. Maity, Perry A. Frey, Shyue-Chu Ke*, *Mechanism Based Inhibition Reveals Transitions Between Two Conformational States in the Action of Lysine 5,6-Aminomutase: A Combination of EPR, ENDOR and DFT Study*, **J. Am. Chem. Soc.**, **135**, 788 (2013)
 19. D.M. Jnaneshwara*, D.N. Avadhani, B. Daruka Prasad, B.M. Nagabhushana, H. Nagabhushana, S.C. Sharma, C. Shivakumara, J.L. Rao, N.O. Gopal, Shyue-Chu Ke, RPS. Chakradhar, *Electron paramagnetic resonance, Magnetic and Electrical properties of CoFe₂O₄ nanoparticles*, Journal: **Journal of Magnetism and Magnetic Materials**, 339, 40 (2013)
 20. M. K. Biswas, S. C. Patra, A. N. Maity, Shyue-Chu Ke, T. Weyhermüller and P. Ghosh*, *9,10-Phenanthrenesemiquinone radical complexes of ruthenium(III), osmium(III) and rhodium(III) and redox series*, **Dalton Trans.**, 42, 6538 (2013)
 21. M. K. Biswas, S. C. Patra, A. N. Maity, Shyue-Chu Ke, T. Weyhermüller and P. Ghosh, *Asymmetric cleavage of 2,20-pyridil to a picolinic acid anion radical coordinated to ruthenium(II): splitting of water to hydrogen*, **Chem. Commun.**, 49, 4522 (2013)
 22. Kundu Suman, Maity Suvendu, Maity Amarendra Nath, Ke Shyue-Chu, Ghosh Prasanta*, *Stabilization of Oxidovanadium(IV) by Organic Radicals*, **Dalton Transactions**, 42, 4586 (2013)
 23. Chiu YF, Chen YH, Roncel M, Dilbeck PL, Huang JY, Ke SC, Ortega JM, Burnap RL, and Chu HA* *Spectroscopic and functional characterization of cyanobacterium Synechocystis PCC 6803 mutants on the cytoplasmic-side of cytochrome b559 in photosystem II*. **Biochim. Biophys. Acta Bioenergetics**, 1827, 507 (2013)

24. Kuang-Lung Hsueh, Liang-Kun Yu, Yung-Han Chen, Ya-Hsin Cheng, Yin-Cheng Hsieh, Shyue-Chu Ke, Kuo-Wei Hung, Chun-Jung Chen, Tai-Huang Huang*, *FeoC from Klebsiella pneumoniae Contains a [4Fe-4S] Cluster*, **J. Bacteriol.**, 195, 4726 (2013)
25. Neeruganti O. Gopal, Hsin-Hsi Lo, Tzu-Feng Ke, Chin-Hua Lee, Chang-Chih Chou, Jyun-De Wu, Shiann-Cherng Sheu*, Shyue-Chu Ke*, *Visible Light Active Phosphorus-Doped TiO₂ Nanoparticles: An EPR Evidence for the Enhanced Charge Separation*, **Journal Physical Chemistry C**, 116, 16191 (2012)
26. Amarendra Nath Maity, Ajam C. Shaikh, Sankareswaran, Chi-Ju Wu, Chinpiao Chen, Shyue-Chu Ke*, *Synthesis of 4-thia-[6-¹³C]lysine from [2-¹³C]glycine: access to site-directed isotopomers of 2-aminoethanol, 2-bromoethylamine and 4-thialysine*, **Amino Acids**, 42, 309 (2012)
27. Manas Kumar Biswas, Sarat Chandra Patra, Amarendra Nath Maity, Shyue-Chu Ke, Nirmal Das Adhikary, and Prasanta Ghosh*, *Electronic Structures of Ruthenium and Osmium Complexes of 9,10-Phenanthrenequinone*, **Inorganic Chemistry**, 51, 6687 (2012)
28. Yung-Han Chen, Amarendra Maity, Yu-Chiang Pan, Perry Frey, Shyue-Chu Ke*, *Radical Stabilization is Crucial in the Mechanism of Action of Lysine 5,6-Aminomutase: Role of Tyrosine-263 α as Revealed by Electron Paramagnetic Resonance Spectroscopy*, **J. Am. Chem. Soc.**, 133, 17152 (2011)
29. Tung-Hei Wang, Yung-Han Chen, Jine-Yung Huang, Kang-Cheng Liu, Shyue Chu Ke*, Hsiu-An Chu*, *Enzyme kinetics, inhibitors, mutagenesis and electron paramagnetic resonance analysis of dual-affinity nitrate reductase in unicellular N₂-fixing cyanobacterium *Cyanothece sp PCC8801**, **Plant Physiology and Biochemistry**, 49, 1369 (2011)
30. Amarendra N. Maity and Shyue-Chu Ke*, *Synthesis of 4-thia[5-¹³C]lysine*, **Journal of Labelled Compounds and Radiopharmaceuticals**, 54, 589, (2011)
31. C. A. Yang, Y. H. Chen, S. C. Ke, T. H. Lin, H. B. Huang, Y. C. Chen*, *Correlation of Copper Interaction, Copper-driven Aggregation and Copper-driven H₂O₂ Formation with A β 40 Structure*, **Int J Alzheimers Dis**. 607861 (2011)
32. Neeruganti O. Gopal, Hsin-Hsi Lo, Shiann-Cherng Sheu, Shyue-Chu Ke*, *A Potential Site for Trapping Photogenerated Holes on Rutile TiO₂ Surface as Revealed by EPR Spectroscopy: An Avenue for Enhancing Photocatalytic Activity*, **J. Am. Chem. Soc.**, 132, 10982 (2010)
33. Chung-Hsien Hung, Hong Jin Hwang, Yung-Han Chen, Yi-Fang Chiu, Shyue-Chu Ke, Robert L. Burnap, Hsiu-An Chu*, *Spectroscopic and functional characterizations of cyanobacterium *Synechocystis PCC 6803* mutants on and near the heme axial-ligand of cytochrome B559 in photosystem II*, **The Journal of Biological Science**, 285, 5653, (2010)
34. Chen Y. J. *, Jhan G. Y., Cai G. L., Lin C. S., Wong M. S., Ke S. C., Lo H. H., Cheng C. L., Shyue J. J., *Identification of carbon sensitization for the visible-light photocatalytic titanium oxide*, **J. Vac. Sci. Technol. A**, 28, 779 (2010)
35. Chiu Yi-Fang, Lin Wen-Ching, Wu Chia-Ming, Chen Yung-Han, Hung Chung-Hsien, Ke Shyue-Chu, Chu Hsiu-An*, *Identification and characterization of a cytochrome b559 *Synechocystis 6803* mutant spontaneously generated from DCMU-inhibited photoheterotrophical growth conditions*, **Biochimica et Biophysica ACTA-Bioenergetics**, 1787, 1179 (2009)
36. Chen Y. J. *, Wu J. M., Lin C. S., Jhan G. Y., Wong M. S., Ke S. C., Lo H. H., *Role of carbon in titania as visible-light photocatalyst prepared by flat-flame chemical vapor condensation method*, **J Vac Sci Technol A**, 27, 862 (2009)
37. Amarendra N. Maity, Chih-Pin Hsieh, Ming-Hui Huang, Yung-Han Chen, Kuo-Hsiang Tang, Elham Behshad, Perry A. Frey and Shyue-Chu Ke*, *Evidence for Conformational Movement and Radical Mechanism in the Reaction of 4-Thia-L-Lysine with Lysine 5,6-Aminomutase*, **Journal of Physical Chemistry B**, 113, 12161 (2009)
38. Hsin-Hsi Lo, Neeruganti O. Gopal and Shyue-Chu Ke*, *Origin of Photoactivity of Oxygen*



■ 計畫執行、開授課程、論文指導、研究獎勵等

C. 三年內執行之研究計畫				
起迄年月	研究計畫名稱	計畫經費	補助單位	
102/8~103/7	運用連續性及高階電子順磁共振方法探索生物系統(III)-離胺酸 5, 6 胺基轉換酶的工作機制及在生物催化劑的潛在應用(跨領域總計畫暨子計畫一)(1/3)	\$8, 417, 500	國科會	
103/8~104/7	運用連續性及高階電子順磁共振方法探索生物系統(III)-離胺酸 5, 6 胺基轉換酶的工作機制及在生物催化劑的潛在應用(跨領域總計畫暨子計畫一)(2/3)	\$6, 600, 000	國科會	
104/8~105/7	運用連續性及高階電子順磁共振方法探索生物系統(III)-離胺酸 5, 6 胺基轉換酶的工作機制及在生物催化劑的潛在應用(跨領域總計畫暨子計畫一)(3/3)	\$5, 600, 000	國科會	
105/8~106/7	自由基工作機制 (跨領域總計畫暨子計畫一)(1/3)	\$4, 000, 000	國科會	
105/8~106/7	二氧化鈦-酵素複合體的電子能階結構與電子-電洞傳遞性質(1/3)	\$3, 138, 000	國科會	
D. 三年內開授課程				
學年度	課程名稱(必/選)	選修人數		
94-96	量子力學(上)(必修)(下)(選修) 生物物理(上)(下)(選修)			
97-98	生物物理(上)(下)(選修) 普通物理實驗(上)(必修) 高等材料與生物物理技術(選修)			
99-106	生物物理(上)(下)(選修) 普通物理(必修) 普通物理實驗(上)(必修) 高等材料與生物物理技術(選修)			
E. 三年內指導研究生狀況				
學年度	碩士班(人)	博士班(人)	畢業人數	
			碩士	博士
103	1	2	1	1
104	1	2	1	0

105	1	2	1	0
106	2	4	1	0
F. 三年內之學術性服務工作項目(請註明校內或校外)				
起迄年月		校內/校外		
2004 起		國立東華大學研發處綜合企劃組組長		

G. 三年內之教研獎勵事蹟		
學年度	國科會	其他(請註明)
99-103		國立東華大學特聘教授
102		理工學院教學優良教師
105		理工學院教學優良教師