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楊展其教授之研究專業與專長主要為成長複雜性氧化物之異質結構，奈米結構，奈米晶體，多層膜，超晶格，介晶體複合材料體系與低維度量子材料。楊展其教授於 2016 加入成功大學後，致力於建立新穎量子材料開發研究團隊，以雷射分子束磊晶技術為主，著重於包含複雜性氧化物的製程開發，薄膜成長與特性分析。相關研究成果已被許多國際知名期刊接受，多項相關重要成果發表於 Nature Materials, Nature

Communications, PRL, Adv. Mater., Nano Lett., ACS Nano, PRB, APL 等期刊。今年(2019 年)申請人帶領成大為主之研究團隊，以通訊作者帶領團隊發表研究成果於頂尖國際研究期刊，Nature Materials (impact factor >39)，並獲包含多家公司與研究機構洽詢技術合作。楊教授執掌的研究團隊之現行研究方向則希望利用量子材料與複雜系統之成長專長 串連多元的微觀分析與調控技術，以及尖端的同步輻射量測能量，用以了解新穎材料的特性並進而開發新穎的奈米元件。

## 研究專長

- 複雜性氧化物
- 雷射分子束磊晶/雷射脈衝沈積
- 同步輻射光譜分析與應用
- 薄膜製程與元件
- 氧化物奈米元件
- 功能性材料成長與檢測
- 功能性異質介面，超晶格與介晶體
- 奈米結構與奈米顆粒分析與應用

## 個人簡歷

2019 迄今

**副教授**

國立成功大學物理系

2016 ~ 2019

**助理教授**

國立成功大學物理系

2015 ~ 2016

**博士後研究員**

德國馬克斯普朗固態物化所

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**Ph. D.**

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## 學術獎項

1. 第八屆傑出人才基金會年輕學者創新獎。
2. 第十八屆徐有庠科技論文獎-奈米科技類。
3. 2019 年台灣物理學會年輕物理學者獎。
4. 科技部愛因斯坦培植計畫。

## 專書章節

1. **J. C. Yang**, R. Ramesh, and Y. H. Chu, "Multiferroic Thin Films", Wiley Encyclopedia of Electrical and Electronics Engineering, 2014 (Published Online: 16 MAR 2015, DOI: 10.1002/047134608X.W8235).
2. **J. C. Yang**, and Y. H. Chu, "Handbook of Magnetism: Multiferroics", Taiwan Associate for Magnetic Technology (in press).
3. 磁性科技與應用，師範大學出版，出版日期 / 2017/04/01。

## 學術發表

### a) Journal Papers

1. J. Seidel, P. Maksymovych, Y. Batra, A. Katan, S.-Y. Yang, Q. He, A. Baddorf, S. V. Kalinin, C.-H. Yang, **J. C. Yang**, Y. H. Chu, E. K. H. Salje, H. Wormeester, M. Salmeron, and R. Ramesh, "Domain Wall Conductivity in La-doped BiFeO<sub>3</sub>", *Phys. Rev. Lett.* **105**, 197603 (2010).
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3. S. C. Liao, P. Y. Tsai, H. J. Liu, **J. C. Yang**, S. J. Lin, C. H. Lai, and Y. H. Chu, "Misorientation Control and Functionality Design of Nanopillars in Self-Assemble Perovskite-Spinel Hetero-epitaxial Nanostructures", *ACS Nano* **5**, 4118 (2011).
4. Y. C. Chen, G. F. Wang, H. H. Tai, J. W. Chen, Y. C. Huang, and **J. C. Yang**, and Y. H. Chu, "Non Volatile Domain Nucleation and Growth in Multiferroic BiFeO<sub>3</sub> Films", *Nanotechnology* **22**, 254030 (2011).
5. Y. P. Chiu, Y. T. Chen, B. C. Huang, M. C. Shih, **J. C. Yang**, Q. He, C. W. Liang, J. Seidel, Y. C. Chen, R. Ramesh, and Y. H. Chu, "Atomic Scale Evolution of Local Electronic Structure Across Multiferroic Domain Walls", *Adv. Mater.* **23**, 1530 (2011).
6. **J. C. Yang**, Q. He, S. J. Suresha, C. Y. Kuo, C. Y. Peng, R. Haislmaier, M. A. Motyka, G. Sheng, C. Adamo, H. J. Lin, Z. Hu, L. Chang, L. H. Tjeng, E. Arenholz, N. J. Podraza, M. Bernhagan, R. Uecker, D. G. Schlom, V. Gopalan, L. Q. Chen, C. T. Chen, R. Ramesh, and Y. H. Chu, "Orthorhombic BiFeO<sub>3</sub>", *Phys. Rev. Lett.* **109**, 247606 (2012).
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11. R. K. Vasudevan, A. N. Morozovska, E. A. Eliseev, J. Britson, **J. C. Yang**, Y. H. Chu, P. Maksymovych, L. Q. Chen, V. Nagarajan, and S. V. Kalinin, "Domain wall geometry controls conduction in ferroelectrics", *Nano Lett.* **12**, 5524 (2012).
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13. B. C. Huang, Y. P. Chiu, P. C. Huang, W. C. Wang, V. T. Tra, **J. C. Yang**, Q. He, J. Y. Lin, C. S. Chang, and Y. H. Chu, "Mapping band alignment across complex oxide heterointerfaces", *Phys. Rev. Lett.* **109**, 246807 (2012).
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19. **J. C. Yang**, C. H. Yeh, U. T. Chen, S. J. Suresha, H. J. Liu, C. W. Liang, S. L. Wu, Q. He, Y. P. Chiu, R. Ramesh, P. W. Chiu and Y. H. Chu "Control of Local Conduction of Ferroic Domain Walls via External Stimuli" *Nanoscale* **6**, 10524 (2014).
20. **J. C. Yang**, Y. L. Huang, Q. He, and Y. H. Chu, "Multifunctionalities driven by ferroic domains", *J. Appl. Phys.* **116**, 066801 (2014).
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23. **J. C. Yang**, Q. He, P. Yu, and Y. H. Chu, "BiFeO<sub>3</sub> Thin Films: A Playground to Electric-Field Control of Functionalities", *Annu. Rev. Mater. Res.* **45**, 249-275 (2015).
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25. **J. C. Yang\***, C. Ju\*, C. Luo, P. Shafer, H. J. Liu, Y. L. Huang, H. H. Kuo, F. Xue, C. W. Luo, L. Q. Chen, Q. He, P. Yu, E. Arenholz, X. M. Lu, and Y. H. Chu, "Anomalous electronic anisotropy triggered by ferroelectric coupling in multiferroic heterostructures", *Adv. Mater.* **28**, 876 (2016).
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27. (Invited) **J. C. Yang**, H. J. Liu, and Y. H. Chu, "Functional mesocrystal embedded oxide systems", *MRS Commun.* **7**, 167 (2016).
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39. (Invited) Y.L. Huang, H. J. Liu, C. H. Ma, P. Yu, Y. H. Chu, and **J. C. Yang**\* "Pulsed laser deposition of complex oxide heteroepitaxy" *Chinese J Phys.* **60**, 481 (2019).
40. Y. C. Wu, S. Z. Ho, Y. C. Liu, Y. D. Liou, W. Y. Liu, S. W. Huang, J. Jiang, Y. C. Chen and **J. C. Yang**\* "Room Temperature Multiferroic PZTFT Thin Films" *ACS Appl. Electron. Mater.* **2**, 19 (2020).