

# 電腦輔助設計與製造研究室

指導教授：余振華 老師

一

## 團隊成員

大學部專題生	碩士班研究生	博士班研究生
陳仲霖	楊文山(畢業)	
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	李凱盛(碩一)	
	鄭智豪(碩一)	

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## 研究方向

從事電腦輔助設計與製造、多軸加工、精密量測、製程規劃之研究，相關計畫研究如刀具加工資料庫研發、多軸工具機之後處理程式研發、遠距協同式加工系統研究、電腦輔助板金模具量測系統之開發…等。

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## 主要設備

	主要設備	件(套)數	採購年月	與課程之配合情形
電腦輔助設計與製造研究室	軟體	1	96.06.06	電腦輔助模具製造
	車銑與銑車複合切削軟體	1	96.10.04	多軸加工特論
	液晶投影機	1	97.05.07	電腦輔助製造實習
	濕度模糊控制器	1	97.07.23	數控工具機實習
				實務專題
				論文研究

#### 四

### 近五年內(94~98年)國科會計畫

1. “遠距協同式虛擬曲面設計與製造系統研發(III)-子計畫二:遠距多軸曲面加工系統研發”, NSC 93-2212-E-212-017.
2. “遠距協同式曲面設計與製造系統架構之研究(III)-總計畫”, NSC-93-2212-E-006-103.
3. “可重組分散式曲面加工服務平台之發展 (I)-子計畫二:可重組式多軸曲面加工製程之發展”, NSC 94-2212-E-212-015.
4. “可重組分散式曲面加工服務平台之發展 (I) -總計畫”, NSC 94-2212-E-006-094.
5. “可重組分散式曲面加工服務平台之發展 (II)-子計畫二:可重組式多軸曲面加工製程之發展”, NSC 95-2221-E-150-101.
6. “可重組分散式曲面加工服務平台之發展 (II) -總計畫”, 國科會研究計畫成果報告 NSC 95-2221-E-006-500
7. “可重組分散式曲面加工服務平台之發展 (III) -子計畫二:可重組式多軸曲面加工製程之發展”, NSC 96-2221-E-150-076.
8. “可重組分散式曲面加工服務平台之發展 (III) -總計畫”, NSC 96-2221-E-006-272
9. “遠距服務智慧型虛擬多軸工具機系統之研發-子計畫二:智慧型多軸工具機虛擬控制器之研發 (I)”, NSC 97-2221-E-150-033
10. “遠距服務智慧型虛擬多軸工具機系統之研發(I) -總計畫”, NSC 97-2221-E-006-100



### 近五年內(94~98年)產學合作計畫

1. “多軸 3D 刀具半徑及磨耗補償技術”，工業技術研究院機械所 97/04/01 ~ 97/11/30
2. “機台設計及刀具分析開發計畫”，粟田科技有限公司 98/08/01 ~ 98/12/31



### 研究成果(如發表論文、專利等)

#### (A)期刊論文

1. Chen-Hua She\* and Chun-Cheng Chang, 2006, “Development of a 3D Cutter Compensation Postprocessor System for Multi-axis Machining”, *Materials Science Forum*, Vol. 505-507, pp. 571-576 (EI, ISIP) (NSC 90-2212-E212-008)
2. Chen-Hua She\*, Chun-Cheng Chang, Yung-Chou Kao and Hsin-Yu Cheng, 2006, “A Study on the Computer-Aided Measuring Integration System for the Sheet Metal Stamping Die”, *Journal of Materials Processing Technology*, Vol. 177, pp. 138-141 (SCI, EI) (NSC 91-2622-E-212-009-CC3 and NSC 92-2622-E-212-012-CC3)
3. Yung-Chou Kao\*, Hsin-Yu Cheng and Chen-Hua She, 2006, “Development of an Integrated CAD/CAE/CAM System on Taper-tipped Thread-rolling Die-plates”, *Journal of Materials Processing Technology*, Vol. 177, pp. 98-103 (SCI, EI) (NSC 94-2622-E-151-005-CC3)
4. Chen-Hua She\* and Chun-Cheng Chang, 2007, “Design of a Generic Five-axis Postprocessor Based on Generalized Kinematics Model of Machine Tool”, *International Journal of Machine Tools & Manufacture*, Vol. 47, No. 3-4, pp. 537-545 (SCI, EI) (NSC 94-2212-E-212-015)
5. Chen-Hua She\* and Chun-Cheng Chang, 2007, “Development of a Five-axis Postprocessor System with a Nutating Head”, *Journal of Materials Processing Technology*, Vol. 187-188, pp. 60-64 (SCI, EI) (NSC 94-2212-E-212-015)
6. Chen-Hua She\*, Yung-Chou Kao, Rong-Shean Lee and Chih-Wei Hung, 2007, “Design and Implementation of a CORBA-based Reconfigurable Software System for Distributed Manufacturing”, *Journal of the Chinese Society of Mechanical Engineers*, Vol. 28, No. 2, pp. 181-186 (EI) (NSC 94-2212-E-212-017 and NSC 94-2212-E-006-094)
7. Chen-Hua She\* and Chun-Chi Chang, 2007, “Study of Applying Reverse Engineering to Turbine Blade Manufacture”, *Journal of Mechanical Science and Technology*, Vol. 21, No. 10, pp.1580-1584 (SCI) (NSC 96-2221-E-150-076)

8. Chen-Hua She\* and Zhao-Tang Huang, 2008, “Postprocessor Development of a Five-axis Machine Tool with Nutating Head and Table Configuration”, *International Journal of Advanced Manufacturing Technology*, Vol. 38, No. 7-8, pp.728-740 (SCI, EI) (NSC 95-2221-E-150-101)
9. Chen-Hua She\*, Chih-Wei Hung, 2008, “Development of Multi-axis Numerical Control Program for Mill-Turn Machine”, *Journal of Engineering Manufacture*, Proc. Instn. Mech. Engrs (B), Vol. 222, No. 6, pp. 741-745 (SCI, EI) (NSC 95-2221-E-150-101)
10. Chen-Hua She\* and Chun-Cheng Chang, 2009, “Development of Internet-based System for Multi-axis Surface Manufacturing”, *International Journal of Advanced Manufacturing Technology*, Vol. 40, No. 9, pp.982-992 (SCI, EI) (NSC 93-2221-E-212-017)
11. 余振華、李建毅、孫金柱，2009，“多軸3D刀具半徑及磨耗補償技術”，*機械工業雜誌*，Vol. 312，pp. 47-56.

#### **(B)研討會論文**

1. Chen-Hua She and Jume-Ming Lee, 2005, “Developing a CORBA-based Computer Aided Surface Machining System”, *Proceedings of the International Manufacturing Leaders Forum on Global Competitive Manufacturing*, 27<sup>th</sup> February ~ 2<sup>nd</sup> March 2005, Adelaide, Australia (NSC-92-2212-E-212-010)
2. R.S Lee, Y. C. Kao, C. H. She and S. P. Liang, 2005, “Development of Remote Collaborative Virtual System for Surface Design and Manufacturing”, *Proceedings of the International Manufacturing Leaders Forum on Global Competitive Manufacturing*, 27th February ~ 2nd March 2005, Adelaide, Australia (NSC-93-2212-E-006-103, NSC-93-2212-E-006-104)
3. 余振華、潘青義，2005，“人工股骨莖參數化設計與製造之研究”，2005年模具技術成果與論文發表會，p. 137.
4. 余振華、張純正，2005，“應用分散式架構開發可重組式曲面加工系統之研究”，第六屆網際網路應用與發展學術研討會，pp. A-337 - A-346. (NSC 93-2212-E-212-017)
5. 余振華、張純正，2005，“建立以CORBA為基礎之分散式製造系統”，第十六屆物件導向技術及應用研討會，pp. 316-321. (NSC 93-2212-E-212-017)
6. Chen-Hua She and Chun-Cheng Chang, 2005, “Development of a 3D Cutter Compensation Postprocessor System for Multi-axis Machining”, *2005 International Conference on Advanced Manufacture*, November 28 – December 02, 2005, Taipei, Taiwan (NSC 90-2212-E212-008)

7. 李榮顯、林彥宏、鄒震羸、高永洲、余振華, 2006, “五軸虛擬工具機在遠距協同虛擬製造之應用”, 第十四屆全國自動化科技研討會, 95年6月2日, 建國科技大學, 彰化 (NSC 94-2212-E-006-094)
8. Chen-Hua She and Chun-Cheng Chang, 2006, “Development of a Five-axis Postprocessor System with a Nutating Head”, *The Third International Conference on Advanced Forming and Die Manufacturing Technology*, September 4-6, 2006, Busan, Korea (NSC 94-2212-E-212-015)
9. Chen-Hua She, Chun-Cheng Chang, Yung-Chou Kao and Hsin-Yu Cheng, 2006, “A Study on the Computer-Aided Measuring Integration System for the Sheet Metal Stamping Die”, *Metal Forming 2006*, September 11-13, 2006, Birmingham, UK (NSC 91-2622-E-212-009-CC3 and NSC 92-2622-E-212-012-CC3)
10. Yung-Chou Kao, Hsin-Yu Cheng and Chen-Hua She, 2006, “Development of an Integrated CAD/CAE/CAM System on Taper-tipped Thread-rolling Die-plates”, *Metal Forming 2006*, September 11-13, 2006, Birmingham, UK (NSC 94-2622-E-151-005-CC3)
11. R. S. Lee, Y. S. Lin, Y. C. Kao and C. H. She, 2006, “Development of Virtual Simulation System for Remote Collaborative Surface Machining”, International Symposium on Digital Manufacturing, 15-17 Oct. 2006, Wuhan, Hubai, China, Volume 1, pp. 68-73, ISSN 1671-4431
12. Chen-Hua She, Yung-Chou Kao, Rong-Shean Lee and Chih-Wei Hung, 2006, “Design and Implementation of a CORBA-based Reconfigurable Software System for Distributed Manufacturing”, *Proceedings of the International Manufacturing Leaders Forum on Future Global Manufacturing*, October 23-25, 2006, Taipei (NSC 94-2212-E-212-015)
13. 余振華, 吳文義, 2007, “鞋楦電腦輔助製造系統之研究”, 2007 模具技術與論文發表會, p. 372 (NSC 95-2221-E-150-101)
14. 余振華, 張俊智, 2007, “以逆向工程製作渦輪葉片之研究”, 2007 模具技術與論文發表會, p. 305.
15. Chen-Hua She and Chun-Chi Chang, 2007, “Study of Applying Reverse Engineering to Turbine Blade Manufacture”, *Advances in Materials and Processing Technologies (AMPT) Conference*, October 7-11, 2007, Daejeon, Korea (NSC 96-2221-E-150-076)
16. Yung-Chou Kao, Rong-Shean Lee, Chen-Hua She and Mau-Sheng Chen, 2008, “An Agent-based Distributed Intelligent Reconfigurable Multi-Axis Machining System”, The 5th International Conference on Digital Enterprise Technology, 22-24 October 2008, Nantes, France.

17. 余振華、黃俊豪, 2008,“車銑複合特徵辨識與加工系統開發”, 中國機械工程學會第二十五屆全國學術研討會, 97年11月21~22日, 大葉大學, 彰化 (NSC 96-2221-E-150-076).
18. 余振華, 2008, “多軸 3D 刀具半徑及磨耗補償技術”, 97 年度精密機械共通性基礎技術大專院校協同研發成果發表會, 97 年 11 月 21 日, 台中世貿, pp. 117-131.
19. Chien-Yi Lee, Chen-Hua She, Yung-Ming Kao, Shih-Chang Liang, Chin-Chu Sun, 2009, “On-line 3D tool wear compensation in a five-axis machine center”, The 10th International Conference on Automation Technology, June 27-29, 2009, National Cheng Kung University, Tainan, Taiwan, R.O.C., pp. 448-454. (ISBN 978-986-01-8402-0)
20. Wen-Yuh Jywe, Jing-Chung Shen, Chien-Hung Liu, Shang-Liang Chen, Tung-Hsien Hsieh, Li-Li Duan and Chen-Hua She, 2009, “Development of the equipments for nano photonic crystal” , The 9<sup>th</sup> International Symposium on Measurement Technology and Intelligent Instruments, June 29 ~ July 2, 2009, Saint-Petersburg, Russia, pp. 1-202 ~ 1-206. (NSC 97-3114-M-150-001)