

Rong-Fong Fung

Professor, Department of Mechanical & Automation Engineering (2004-08~)

Professor, Graduate Institute of Electro-Optical Engineering (2004-08~)

Dean, College of Engineering (2010-08~)

Chairman, Institute of Engineering Science and Technology (2010-08~)



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Education

1993 Ph. D. Mechanical Engineering, National Taiwan University.

1985 M. Sc. Mechanical Engineering, Chung-Yuan University.

1983 B. Sc. Mechanical Engineering, National Chung-Hsin University.

Professional Experience

2004-08~ Professor, Department of Mechanical & Automation Engineering and Graduate Institute of Electro-Optical Engineering, NKFUST

2010-08~ Dean, College of Engineering, NKFUST

2010-08~ Chairman, Institute of Engineering Science and Technology, NKFUST

2006-08~2007-07 Chairman, Center for Teaching and Learning, NKFUST

2009-08~2010-04 Dean, Office of Academic Affairs, NKFUST

2004-08~2007-07 Dean, Office of Academic Affairs, NKFUST

2004-08~2005-07 Chairman, Institute of Electro-Optical Engineering, NKFUST

2000-08~2004-07 Professor, Department of Mechanical & Automation Engineering, NKFUST

1997-07 Visiting Scholar, Department of Electrical Engineering, The Ohio State University

1985-08~1999-07 Lecturer, Associate professor, Professor, Department of Mechanical Engineering, Chung Yuan University

Honors

2010 Outstanding Research Award, NKFUST

2010 Outstanding Industry-Academia Cooperation Award, NKFUST

2006 Outstanding Engineering Professor Award, the Chinese Mechanical Engineering Association, Taiwan

2005 Academic Research Award, NKFUST

2004 Outstanding Research Award, National Science Council, Taiwan

2004 Outstanding Mechanical Engineer Award, the Chinese Mechanical Engineering Association, Taiwan

Areas of Research

Dynamics and Control of Opto-Mechotronic Systems

Optimal Instrument Design of Automated Optical Inspection (AOI) for LCD and Head-lamp of Vehicle

Membership

The Chinese Society of Mechanical Engineer, ROC

The Society of Theoretical and Applied Mechanics, ROC

SAE International, Taipei Section

Editorial Boards

Associate Editor, Journal of the Chinese Society of Mechanical Engineers, since Sept. 2004.

Associate Editor, Journal of Mechatronics and Applications, since Feb. 2009.

Paper Reviewer of International Journals:

ASME Journal of Dynamic Systems, Measurement and Control; ASME Journal of Vibration and Acoustics; ASME Journal of Applied Mechanics; ASME Journal of Mechanical Design; Journal of Systems and Control Engineering; International Journal of Mechanical Science; Mechatronics; Mechanism and Machine Theory; Journal of Sound and Vibration; IEE-CTA, IJSS, ISA, JEM, IMechE ... etc.

BIOGRAPHIES

Rong-Fong Fung received the M.S. and Ph.D degrees in Mechanical Engineering from Chung Yuan University and National Taiwan University, Taiwan, in 1982 and 1993, respectively. He was a lecturer, associate professor and professor in the Department of Mechanical Engineering of Chung Yuan University, from 1985 to 2000. He was a visiting scholar of Department of Electrical Engineering of The Ohio State University in 1997.

He is currently, a professor of Department of Mechanical & Automation Engineering (from Aug. 2000) and Graduate Institute of Electro-Optical Engineering (from Aug. 2004), Dean of College of Engineer (from Aug. 2010), and Chairman of Institute of Engineering Science and Technology (from Aug. 2010), National Kaohsiung First University of Science and Technology (NKFUST), Taiwan. He was Dean of Academic Affairs (Aug. 2004 to July 2007, Aug. 2009 to April 2010, NKFUST) and Chairman of Graduate Institute of Electro-Optical Engineering (Aug. 2004 to July 2005, NKFUST).

Professor Fung received the Outstanding Research Award (2005, 2010, NKFUST), Outstanding Industry-Academia Cooperation Award (2010, NKFUST), Outstanding Engineering Professor Award (2006, the Chinese Mechanical Engineering Association, Taiwan), and Outstanding Research Award, 2004, NSC, Taiwan).

His main research interest includes dynamics and control of opto-mechatronic systems, and equipment development of automated optical inspection (AOI) for LED and vehicle lamps.

PUBLICATIONS

A. Journal Papers: (selected)

1. R. F. Fung and W. C. Lin, (2010), System Identification and Contour Tracking of a Plane-Type 3-DOF (X, Y, θ_z) Precision Positioning Table, IEEE Transactions on Control Systems Technology vol. 18, no. 1, pp. 22–34, 2010, (SCI I. F.: 1.211) (AUTOMATION & CONTROL SYSTEMS 11/53) (ENGINEERING, ELECTRICAL & ELECTRONIC 52/229) NSC-95-2221-E-327-050-MY2
2. R. F. Fung, Y. S. Kung and G. C. Wu, (2010), Dynamic Analysis and System Identification of an LCD Glass-Handling Robot Driven by a PMSM, Applied Mathematical Modelling, Vol. 34, No. 5, pp. 1360–1381, 2010 (SCI I. F.: 0.931) NSC-97-2221-E-327-016-MY3
3. R. F. Fung, C. L. Chiang and G. C. Wu, (2010), System Identification of a Pick-and-Place Mechanism Driven by a Permanent Magnet Synchronous Motor, Applied Mathematical Modelling, Vol. 34, Iss. 9, Sep. 2010, pp. 2323-2335 (SCI I. F.: 0.931) NSC-97-2221-E-327-016-MY3,
4. C. L. Chiang, C. W. Chuang, C. C. Kao and R. F. Fung, (2009), Applying Modified MIMO DIVSC to Synchronism and Tension Control of Dual Motor Systems, JOURNAL OF DYNAMIC SYSTEMS MEASUREMENT AND CONTROL-TRANSACTIONS OF THE ASME, Vol. 131, Iss. 5, No. 054501, Sep. 2009 (SCI I. F.: 0.325) NSC94-2212-E-214-002
5. Y. S. Kung, R. F. Fung and Ting-Yu Tai, (2009), Realization of Motion Control IC for X-Y Table Based on Novel FPGA Technology, IEEE Transaction on Industrial Electronics, Vol. 56, No. 1, pp. 43-53, Jan. 2009 (SCI)
6. R. F. Fung, Y. L. Hsu and M. S. Huang, (2009), System Identifications of a Dual-Stage XY Precision Positioning Table, PRECISION ENGINEERING - JOURNAL OF THE INTERNATIONAL SOCIETIES FOR PRECISION ENGINEERING AND NANOTECHNOLOGY, Vol. 33, Iss. 1, pp. 71-80, Jan. 2009 (SCI I. F.: 0.796) (ENGINEERING, MANUFACTURING 19/38) (ENGINEERING, MULTIDISCIPLINARY 27/68) NSC-95-2221-E-327-050-MY2. ([Top 2 Hottest Articles October - December 2008](#); [Top 21 Hottest Articles, April-June, 2008](#))

7. R. F. Fung and W. C. Lin, (2009), System Identification of a Novel 6-DOF Precision Positioning Table, SENSORS AND ACTUATORS A: PHYSICAL, Vol. 150, Iss. 2, pp.286-295, Mar. 2009 (SCI I. F.: 1.462) (ENGINEERING, ELECTRICAL & ELECTRONIC 64/229) NSC 95-222-E-327 -007 -MY3
8. C. W. Chuang, M. S. Huang, K. Y. Chen and R. F. Fung, (2008) Adaptive Vision-Based Control of a Motor-Toggle Mechanism: Simulations and Experiments, JOURNAL OF SOUND AND VIBRATION vol. 312, pp. 848-861 (SCI I. F.: 0.884) NSC-93-2745-E-327-001
9. R. F. Fung, C. F. Han and J. L. Ha, (2008), Dynamic Responses of the Impact Drive Mechanism Using the Distributed Parameter System, Applied Mathematical Modelling, Vol. 32, pp. 1734-1743 (SCI I. F.: 0.583)
10. R. F. Fung, C. F. Han and J. R. Chang, (2008), Dynamic Modelling of a High-Precision Self-Moving Stage with Various Frictional Models, Applied Mathematical Modelling Vol. 32, pp. 1769-1780 (SCI I. F.: 0.583), NSC-92-2212-E-327-006
11. C. L. Chiang, and R. F. Fung, (2008), Mechanical Design and Motion Analysis of a Pick-and-Place Mechanism, Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science, Vol. 222, No. 12, pp. 2463-2473, (SCI I. F.: 0.329) NSC 95-2221-E-327 -007 -MY3.

B. Patents:

1. R. F. Fung and C. T. Fan, A cascade of 3 DOF micro/nano Table, R.O.C. Patent No. M303484, 20061221- 20160328.
2. J. L. Jiang, J. L. Lin, J. Y. Hu and R. F. Fung, Multi-function mechanical dog assembly structure, Taiwan Patent No. M296071, 20060821- 20160110.
3. R. F. Fung and S. C. Hu, Micro/nano positioning platform with six degrees of freedom consisted of two independent platforms with three degrees of freedom, Taiwan Patent No. I253967, 20060501- 20250116.
4. R. F. Fung and S. C. Hu, Six-DOF micro/nano-grade precision positioning table

constructed of elliptical composite amplification mechanisms, Taiwan Patent No. I244960, 20051211- 20241005.

5. R. F. Fung, S. C. Hu and C. T. Fan, Micro/nano cylindrical platform with three degrees of freedom, Taiwan Patent No. M282770, 20051211- 20150621.
6. J. L. Jiang, R. F. Fung and J. Y. Hu, Practicing stage for mechanical-electrical integration technology, Taiwan Patent No. M267737, 20050611- 20141111.
7. Y. T. Liu, R. F. Fung and J. C. Wang, Multi-Degree-of-Freedom of Precision Positioning Device Using Spring-Mounted Electromechanical Actuators, US6879758 B2, 20050412- 20250412.
8. J. L. Lin, J. L. Jiang and R. F. Fung, Foldable frame of mechanical and electrical integration practice platform, Taiwan Patent No. M261783, 20050411- 20140506.
9. J. R. Li, J. H. Jeng and R. F. Fung, Cutting tools for micro actuating Scott-Russell linear mechanism, Taiwan Patent No. M255084, 20050111- 20140129.
10. F. B. Lin, J. Y. Hu, J. L. Jiang and R. F. Fung, Fixing frame for back-projection type display, Taiwan Patent No. M254620, 20050101- 20140226.
11. R. F. Fung, J. Y. He and S. C. Hu, Planar three-degree-of-freedom nanometer positioning platform, Taiwan Patent No. M252495, 20041211- 20140129.
12. Y. T. Liou, R. F. Fung and J. C. Wang, Non-linear rotation fine adjustment device capable of rotation in nanometer/micrometer scale comprising a piezoelectric element that receives electric signal to induce an impact onto a rotary table for making displacement of nanometer/micrometer order of the table, Taiwan Patent No. I205835, 20040601- 20221024.
13. Y. T. Liou, R. F. Fung, J. C. Gau and J. W. Wang, Universal rolling fine-tuning device with nano/micro scale rotating functions capable of nano/micro-grade rolling, Taiwan Patent No. I195297, 20031221- 20221024.
14. J. L. Jiang, C. T. Jau and R. F. Fung, Automatic guitar playing device, Taiwan Patent No. M207317, 20030721- 20140320.
15. J. L. Jiang and R. F. Fung, Automatic ball shooting device, Taiwan Patent No. M206372, 20030621- 20140613.
16. Y. T. Liou, R. F. Fung and J. C. Wang, 6-DOF fine position adjustment platform wherein a clamp provided is capable of angular displacement and linear displacement in various directions so as to result in 6-DOF movement, Taiwan

Patent No. I180737, 20030611- 20221024.

17. R. F. Fung and J. L. Jiang, Device for automatically frying egg on both sides, Taiwan Patent No. M196619, 20021101- 20131226.
18. R. F. Fung and J. L. Jiang, Fully automatic processing device for producing egg rolls, Taiwan Patent No. M196150, 20021001- 20131230.
19. F. J. Lin, R. Y. Duan and R. F. Fung, Driving circuit for using push-pull dc-dc converter ultrasonic motor, Taiwan Patent No. M141772, 19981111- 20090302.

C. Books and Book Chapters (selected):

1. R. F. Fung and K. Y. Chen, 2010, Vision-Based Control of the Mechatronic System, a chapter in Visual Servoing (Edited by R. F. Fung), IN-TECH, ISBN 978-953-307-087-2
2. R. F. Fung, 2005, Chapter 4 Nano Measurement and Manufacture pp. 97-120; R. F. Fung, J. F. Huang, Experiment 3 Models of Nano Carbon Ball and Tube pp. 389-396; Nano Science and Technology - Fundamental, Applications and Experiments - Kao-Li Book Company, Taiwan, ISBN 986-412-225-8.
3. R. F. Fung and S. T. Chen, 2003, Introduction to Nano-Engineering, ISBN 957-21-4105-8, (2004.9 second edition, ISBN 957-21-4609-2), Chuan-Hwa Science & Technology Book Company, Taiwan.
4. R. F. Fung, 2002, Micro-Nano Engineering - Precision Manufacture and Measurement Technology, Chan-Hai Book Company, Taiwan, ISBN 957-2079-52-2.
5. W. L. Lee and R. F. Fung, 2002, Nano Engineering, Chan-Hai Book Company, Taiwan, ISBN 986-7777-01-8.
6. W. L. Yao, R. F. Fung and J. H. Chou, 2001, Sequence Control, Kao-Li Book Company, Taiwan, ISBN 957-584-924-8.
7. W. L. Yao, R. F. Fung and J. H. Chou, 2001, How to Write Engineering Reports, Cheng-Wei Book Company, Taiwan, ISBN 957-8955-92-8.
8. R. F. Fung, J. W. Wu and H. J. Chen, 2001, Dynamics and Motion Control of Mechanism Systems, Chan-Hai Book Company, Taiwan, ISBN 957-2079-19-0.

9. R. F. Fung and S. C. Huang, 2000, *Mechanics by Energy Method—Modeling of Dynamic Systems*, Chan-Hai Book Company, Taiwan, ISBN 957-8355-83-1.