

# Shun-Chang Yen 閻順昌

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**Date of Birth** July 17, 1969

**Current Position** **Professor and Chairman**, Department of Mechanical and Mechatronic Engineering, National Taiwan Ocean University, 2017/08–present.

**Professor**, Department of Mechanical and Mechatronic Engineering, National Taiwan Ocean University, 2012/08–present. (No. 019815)

**Associate Professor**, Department of Mechanical and Mechatronic Engineering, National Taiwan Ocean University, 2007/08–2012/07. (No. 035641)

**Assistant Professor**, Department of Mechanical and Mechatronic Engineering, National Taiwan Ocean University, 2003/09–2007/07. (No. 010868)

**Corresponding Editor**, Journal of Marine Science and Technology (Journal Citation Reports (JCR), Science Citation impact factor of 0.379 at 2014), 2016 – present.

Student Pilot, Chinese Air Force Academy, 1989–1992.

**Education** Ph.D. in Mechanical Engineering, National Taiwan University of Science and Technology, Taiwan, R.O.C., 1998–2003. Thesis: Flow Control and Flame Manipulation of Swirling Jets Using a Dual-Disc Blockage Configuration.

M.S. in Mechanical Engineering, National Taiwan University of Science and Technology, Taiwan, R.O.C., 1996–1998. Thesis: Characteristic of Vortex Motion on Suction Surface of an Impulsively-Started Wing: Application of PIV.

B.S. in Chinese Air Force Academy, Taiwan, R.O.C., 1988–1992.

**Professional memberships** Member, The Chinese Society of Mechanical Engineers, Taiwan, R.O.C., 2000–present.

Member, The Aeronautical and Astronautical Society of the Republic of China, Taiwan, R.O.C., 2000–present.

Member, The Combustion Institute of Republic of China, Taiwan, R.O.C., 2001–present.

**Research Areas** Fluid Mechanics; Aerodynamics; Combustion Technology; Chemically Reacting Flows; Heat Transfer; Wind Engineering; Thermodynamics; Diffusion Transmission

## Publications

### I. Referred paper

1. **Yen, S. C.**, Huang, J. X., and San, K. C., 2017, "Wind Farm Characteristics of Side-by-Side and Tandem Configurations," *Ocean Engineering*, Vol. 137, Issue June, pp. 89–98. (SCI, IF: 1.488, ENGINEERING,

MARINE: 2/14). MOST 103-2221-E-019-027.

2. **Yen, S. C.**, Shih, C. L., and San, K. C., 2017, "Non-Premixed Flame Characteristics and Exhaust Gas Concentrations behind Rifled Bluff-Body Cones," *Journal of the Energy Institute*, accepted and in press. (SCI, IF: 1.00, ENERGY & FUELS: 64/88)
3. **Yen, S. C.**, Wu, C. H., and San, K. C., 2017, "Characteristics of Flow Configurations around Side-by-Side Twin Wind Blades," *Experimental Thermal and Fluid Science*, Vol. 82, pp. 302–313. (SCI, IF: 2.128, ENGINEERING, MECHANICAL: 25/132). NSC 102-2221-E-019-018.
4. **Yen, S. C.**, Wu, S. F., and San, K. C., 2016, "Modulation of Wake Flow and Aerodynamic Behaviors around a Square Cylinder Using an Upstream Control Bar," *Experimental Thermal and Fluid Science*, Vol. 70, pp. 139–147. (SCI, IF: 2.128, ENGINEERING, MECHANICAL: 25/132). NSC 97-2221-E-019-03.
5. **Yen, S. C.**, Huang, Y. Z., and San, K. C., 2015, "Thermal Characteristics and Exhaust-gas Analysis behind Bluff-Body Frustums," *Fuel*, Vol. 159, Issue 1 November, pp. 519-529. (SCI, IF: 3.611, ENGINEERING, CHEMICAL: 19/135). NSC 98-2221-E-019-040-MY3.
6. Jhou, S.-G., Lin, Y.-H., and **Yen, S. C.**, 2015, Intake Noise Suppression of a High Speed Fan, *Journal of Applied Sound and Vibration*, Vol. 6, No. 2, pp. 21-30. DOI: 10.6282/JASV.2014.6.2.04.
7. San, K. C., Lin, Y. Z., and **Yen, S. C.**, 2014, "Effects of Sweep Angles and Angles of Attack on Junction-Flow Patterns," *Journal of Marine Science and Technology*, Vol. 22, No. 2, pp. 204-210. (SCI, IF: 0.379, Ranking: 87%)
8. San, K. C., Hung, S. C., and **Yen, S. C.**, 2014, "Flow Patterns, Turbulence Intensity and Aerodynamic Performances of Two Tandem Blades," *IMEchE—Part G, Journal of Aerospace Engineering* (Institution of Mechanical Engineers), Vol. 228, No. 7, pp. 1114-1129. (SCI, IF: 0.839, Ranking: 40%)
9. San, K. C., Shih, C. L., and **Yen, S. C.**, 2014, "Cold-Flow Patterns behind Novel Rifled Bluff-Body Cones," *Journal of Mechanical Science and Technology*, Vol. 28, No. 3, pp. 887-894. (SCI, IF: 0.838; ENGINEERING, MECHANICAL, Ranking: 58%)
10. **Yen S. C.**, San, K. C., and Lin, Y. Z., 2013, "Influences of Upstream Floor Roughness and Aerodynamic Parameters on Swept-Wing Junction Flow," *Experimental Thermal and Fluid Science*, Vol. 45, Issue February, pp. 16–24. (SCI, IF: 2.128, Ranking: 19%)
11. **Yen, S. C.** and Shih, C. L., 2013, "Improving Combustion Intensity and Modulating Flame Behaviors using Helical-Grooved Cones," *Journal of Mechanics*, Vol. 29, Issue 02, pp 273–280. (SCI, IF: 508, Ranking: 87%)
12. San, K. C., Huang, Y. Z., and **Yen, S. C.**, 2013, "Flame Patterns and Combustion Intensity behind Rifled Bluff-Body Frustums," *ASME Journal of Engineering for Gas Turbines and Power* (American Society of Mechanical Engineering), Vol. 135, No. 12, pp. 121502. (SCI, IF: 0.804, Ranking: 40%)
13. San, K. C., Huang, Y. Z., and **Yen, S. C.**, 2013, "Cold-Flow Patterns and Mixing Index behind/near Rifled Bluff-Body Frustums," *Journal of Visualization*, Vol. 16, No. 3, pp 229-246. (SCI, IF: 0.575, Ranking:

90%)

14. San, K. C., Hsu, H. J., and **Yen S. C.**, 2013, "Flame Structure and Combustion Capability of Non-Premixed Rifled Nozzles," *ASME Journal of Engineering for Gas Turbines and Power* (American Society of Mechanical Engineering), Vol. 135, No. 7, pp. 071501. (SCI, IF: 0.804, Ranking: 40%)
15. **Yen, S. C.** and Yang, C. W., 2012, "Characteristic Flow Field behind a Square-Cylinder using Upstream Mesh Fences," *ASME Journal of Fluids Engineering* (American Society of Mechanical Engineering), Vol. 134, No. 9, pp. 091202\_1–9. (SCI, IF: 0.932, Ranking: 64%)
16. **Yen, S. C.** and Wu, S. F., 2012, "Square-Cylinder Flow Characteristics Using an Upstream Control Rod," *Journal of Mechanics*, Vol. 28, No. 2, pp. 279–289. (SCI, IF: 0.508, Ranking: 87%)
17. **Yen, S. C.** and Liu, C. T., 2011, "Gap-Flow Patterns behind Twin-Cylinders at Low Reynolds Number," *Journal of Mechanical Science and Technology*, Vol. 25, No. 11, pp. 1–9. (SCI, IF: 0.379, Ranking: 58%)
18. **Yen, S. C.** and Fei, Y. F., 2011, "Winglet Dihedral Effect on Flow Behavior and Aerodynamic Performance of NACA0012 Wings," *ASME Journal of Fluids Engineering* (American Society of Mechanical Engineering), Vol. 133, No. 7, pp. 071302\_1–9. (SCI, IF: 0.932, Ranking: 64%)
19. **Yen, S. C.** and Huang, L. -C., 2011, "Reynolds Number Effects on Flow Characteristics and Aerodynamic Performances of a Swept-Back Wing," *Aerospace Science and Technology*, Vol. 15, No. 3, pp. 155–164. (SCI, IF: 0.940, Ranking: 30%)
20. **Yen, S. C.** and Liu, J. H., 2011, "Wake Flow behind Two Side-by-Side Square Cylinders," *International Journal of Heat and Fluid Flow*, Vol. 32, No. 1, pp. 41–51. (SCI, IF: 1.159, Ranking: 26%)
21. **Yen, S. C.** and Yang, C. W., 2011, "Flow Patterns and Vortex Shedding Behavior behind a Square Cylinder," *Journal of Wind Engineering and Industrial Aerodynamics*, Vol. 99, No. 7, 2011, pp. 868–878. (SCI, IF: 1.414, Ranking: 28%)
22. **Yen, S. C.**, 2011, "Aerodynamic Performance and Shedding Characteristics on a Swept-Back Wing," *Journal of Marine Science and Technology*, Vol. 19, No. 2, pp. 162-167. (SCI, IF: 0.379, Ranking: 87%)
23. Huang, R. F., Lin, B. H., and **Yen, S. C.**, 2010, "Topological Flow Patterns and Their Effects on Surface Pressure Distributions and Vortex Shedding of a Square Cylinder in Crossflow at Incidence," *Journal of Fluid and Structures*, Vol. 26, pp. 406–429. (SCI, IF: 2.229, Ranking: 9%)
24. **Yen, S. C.** and Huang, L. -C., 2009, "Flow Patterns and Aerodynamic Performance of Unswept and Swept-Back Wings," *ASME Journal of Fluids Engineering* (American Society of Mechanical Engineering), Vol. 131, No. 11, pp. 111101-10. (SCI, IF: 0.932, Ranking: 64%)
25. **Yen, S. C.**, San, K. C., and Chuang, T. H., 2008, "Interactions of Tandem Square Cylinders at Low Reynolds Numbers," *Experimental Thermal and Fluid Science*, Vol. 32, No. 4, pp. 927-938. (SCI, IF: 2.128, Ranking: 19%)
26. Huang, R. F and **Yen, S. C.**, 2008, "Aerodynamic Characteristics and Thermal Structure of Nonpremixed

Reacting Swirling Wakes at Low Reynolds Numbers,” *Combustion and Flame*, Vol. 155, No. 4, pp. 539-556. (SCI, IF: 3.588, Ranking: 1%)

27. **Yen, S. C.** and Hsu, C. M., 2007, “Investigation on Vortex Shedding of a Swept-Back Wing,” *Experimental Thermal and Fluid Science*, Vol. 31, No. 8, pp. 849-855. (SCI, IF: 2.128, Ranking: 19%)
28. **Yen, S. C.** and Liu, J. H., 2007, “PIV Measurements of Exit Flow Field of Centrifugal Fans with Conditional Sampling,” *Journal of Marine Science and Technology*, Vol. 15, No. 3, pp. 232-240. (SCI, IF: 0.379, Ranking: 87%)
29. **Yen, S. C.** and Hsu, C. M., 2007, “Flow Patterns and Wake Structure of a Swept-Back Wing,” *AIAA Journal* (American Institute of Aeronautics and Astronautics), Vol. 45, No. 1, pp. 228-236. (SCI, IF: 1.174, Ranking: 18%)
30. **Yen, S. C.** and Hsu, C. M., 2007, “Influence of Boundary Layer Behavior on Aerodynamic Coefficients of a Swept-Back Wing,” *ASME Journal of Fluids Engineering* (American Society of Mechanical Engineering), Vol. 129, No. 6, pp. 674-681. (SCI, IF: 0.932)
31. **Yen, S. C.** and Lin, K. T., 2006, “Exit Flow Field and Performance of Axial Flow Fans,” *ASME Journal of Fluids Engineering* (American Society of Mechanical Engineering), Vol. 128, No. 2, pp. 332-340. (SCI, IF: 0.932)
32. **Yen, S. C.** and Huang, R. F., 2003, “Flow Control on Swirling Jets Using a Dual-Disc Blockage,” *Journal of the Chinese Institute of Engineers*, Vol. 26, No. 7, pp. 435-442. (SCI)
33. Huang, R. F. and **Yen, S. C.**, 2003, “Axisymmetric Swirling Vortical Wakes Modulated by a Control Disc,” *AIAA Journal* (American Institute of Aeronautics and Astronautics), Vol. 41, No. 5, pp. 888-896. (SCI, IF: 1.174, Ranking: 18%)
34. Huang, R. F., **Yen, S. C.**, Huang, C. Y., Wu, J. Y., and Chen, R. C., 1999, “PIV measurements of vortex evolution on an impulsively started wing,” *Journal of Flow Visualization and Image Processing*, Vol. 6, No. 1, pp. 1-17. (EI)

## II. Conference paper

1. **Yen, S. C.**, Peng, Y. L., and San, K. C., 2017, "Design of a Porous Bluff-Body Disc on Improving the Gas-Mixing Efficiency," The 25th World Congress on Engineering (WCE 2017)– International Conference of Mechanical Engineering, Paper number: ICME\_31, London, United Kingdom, July 5-7, 2017.
2. **Yen, S. C.**, Shiha, S. L., and San, K. C., 2016, "Diffusion Flame Behaviors and Exhaust Gas Modulated using Rifled Taper Cones," The 4th Seoul International Conference on Applied Science and Engineering (SICASE 2016), Paper number: SICASE-1066, South Korea, July 5-7, 2016.
3. **Yen, S. C.**, Hung, S. C., and San, K. C., 2014, "Coupled Surface Oil Flow Patterns on Two Tandem Wing Blades", The 3rd Hong Kong International Conference on Engineering and Applied Science (2014 HKICEAS), Paper number: 201412-1114, Hong Kong, December 29–31, 2014.

4. **Yen, S. C.**, Kuo C. San, Yu-Fan Fei, and Sheng C. Hung, 2011, “Effects of Winglet Dihedral on Surface Flow Patterns”, The 11th International Conference on Fluid Control, Measurements and Visualization (FLUCOME 2011), Paper number: 113, Keelung, Taiwan, December 5–9, 2011.
5. **Yen, S. C.**, and Sheng-Feng Wu, 2011, “Square-Cylinder Flow Patterns Modulated Using an Upstream Control Rod,” The 2011 International Conference on Fluid Dynamics and Thermodynamics, Paper number: F024, South Kuta, Bali, Indonesia, April 1–3, 2011.
6. **Yen, S. C.**, and Ching-Min Hsu, 2010, “Surface-Flow Patterns a Swept-Back Wing,” The 2010 Asia-Pacific International Symposium on Aerospace Technology (APISAT-2010), Paper number: APISAT 10YS453, Xi’An, Chinese, September 13–15, 2010.
7. **Yen, S. C.**, and Hung-Jen Hsu, 2008, “Thermal Structures and Combustion Efficiency of Non-Premixed Reacting Rifled Nozzles,” The 22th International Congress of Theoretical and Applied Mechanics (ICTAM2008), Paper number: ICTAM08ID 11743, Adelaide, Australia, August 24–29, 2008.
8. **Yen, S. C.**, and Jung-Hsuan Liu, 2008, “Flow Structures of Side-by-Side Square Cylinders at Low Reynolds Numbers,” International Engineering Research Conference (IERC), Paper number 2D-1, Cebu City, Philippines, March 13–15, 2008.
9. **Yen, S. C.**, and Yu-Fan Fei, 2008, “Surface Flow and Aerodynamic Performance on a Swept-Forward Wing,” International Engineering Research Conference (IERC), Paper number 2D-9, Cebu City, Philippines, March 13–15, 2008.
10. **Yen, S. C.**, and Hsu, C. M., 2007, “Effects of Angle of Attack on a Swept-Back Wing,” The First Council of the European Aerospace Societies: European Air and Space Conference (CEAS 2007), Berlin, Germany, Paper number 720.
11. **Yen, S. C.**, Liu, C. T., and Wu, S. H., 2006, “Effects of Low Speed Flow on a Square Cylinder,” The Tenth East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-10), Bangkok, Thailand, Paper number WE-AU-0194.

### III. Patents

1. **閻順昌**, 單國卿, 施志龍, **錐狀形鈍體噴嘴機制**, 中華民國新型專利第 M 382453 號, 2010.
2. **閻順昌**, 單國卿, 李元凱, **太極形旋流產生器**, 中華民國新型專利第 M 395129 號, 2010.

### IV. Research projects

計畫名稱	委託單位	執行期間	擔任職務
新式鈍體提升非預混火焰溫度均勻性及燃燒效率之分析 (II) (MOST 106-2221-E-019-055)	科技部	2017 2017/08/01 2018/07/31	計畫主持人
新式鈍體提升非預混火焰溫度均勻性及燃燒效率之分析 (MOST 105-2221-E-019-038)	科技部	2016 2016/08/01	計畫主持人

		2017/07/31	
以曲翼型導葉片改善彎角管道效能的設計 (104-2221-E-019-031-)	科技部	2015 104/08/01 105/07/31	計畫主持人
S809 翼型群組風機受不同幾何配置的流場行為 (103-2221-E-019-027-)	科技部	2014 103/08/01 104/07/31	計畫主持人
「新型烘手機之流道改善與噪音控制」 (NTOU 103-I26003C) (和光工業股份有限公司)	私人公司	2014 103/03/01 103/10/31	共同主持人
高效低噪烘手機之創新設計 (102-2622-E-019-005-CC3)	科技部	2013 102/11/01 103/10/31	計畫主持人
並行翼葉片流場特性應用於群組風機之效能提升 (102-2221-E-019-018-)	科技部	2013 102/08/01 103/07/31	計畫主持人
產學合作計畫－高效低噪烘手機之創新設計 (NTOU 102-1508111) (和光工業股份有限公司)	私人公司	2013 102/11/01 103/10/31	計畫主持人
「烘手機空氣流道之研究」研究計畫 (NTOU 102-I26003H) (和光工業股份有限公司)	私人公司	2013 102/03/01 102/11/30	計畫主持人
多級數轉子、不同間隙葉片及其受腔線調控之流場分析 並應用於風機效能提升(101-2221-E-019-029-)	科技部	2012 101/08/01 102/07/31	計畫主持人
新式非預混雙旋流燃燒噴嘴設計與分析- 3/3 (NSC98-2221-E-019 -040 -MY3) – 3/3	國科會	2011 100/08/01 101/07/31	計畫主持人
新式非預混雙旋流燃燒噴嘴設計與分析- 2/3 (NSC98-2221-E-019 -040 -MY3) – 2/3	國科會	2010 99/08/01 100/07/31	計畫主持人
新式非預混雙旋流燃燒噴嘴設計與分析- 1/3 (NSC98-2221-E-019 -040 -MY3) – 1/3	國科會	2009 98/08/01 99/07/31	計畫主持人
以主、被動流動控制方式調制鈍體流場特性及應用：調 控桿、柵欄激擾、脈動泵及聲音波激擾 (NSC 97-2221-E-019-039)	國科會	2008 97/08/01 98/07/31	計畫主持人
水質檢測微全分析系統之設計與製作(II) (NSC 97-2221-E-019-029)	國科會	2008 97/08/01 98/11/30	共同主持人
以主、被動流動控制方式調制不同掠角機翼的表面流場 與提高氣動力性能 (NSC 96-2221-E-019 -006)	國科會	2007 96/08/01	計畫主持人

		97/07/31	
前掠翼機翼的流場特性對氣動力性能及渦漩流逸影響之研究(NSC 95-2221-E-019 -016)	國科會	2006 95/08/01 96/07/31	計畫主持人
以腔線化噴嘴改善燃燒效率及碳氫化合物污染的應用(NSC 94-2622-E-019-003-CC3)	國科會	2005 94/11/01 95/10/31	計畫主持人
不同後掠角對機翼流場特性、氣動力性能及尾流區非穩態結構的研究(NSC 94-2212-E-019-006)	國科會	2005 94/08/01 95/07/31	計畫主持人

## V. Relevant experiences

1. **Corresponding Editor**, Journal of Marine Science and Technology (Journal Citation Reports (JCR), Science Citation impact factor of 0.379 at 2014)
2. Reviewer, Physics of Fluids.
3. Reviewer, ASME Journal of Fluids Engineering.
4. Reviewer, AIAA Journal of Propulsion and Power.
5. Reviewer, Journal of the Chinese Institute of Engineering.
6. Reviewer, Experimental Thermal and Fluid Science.
7. Reviewer, Journal of Marine Science and Technology.
8. Reviewer, The 7th Asia-Pacific Conference on Combustion, 2009. 02.
9. Reviewer, Journal of Mechanics.
10. Reviewer, Journal of Mechanical Science and Technology.
11. Reviewer, Numerical Heat Transfer.