**Lan, Chung-Wen （藍崇文）**

Professor

Diploma in Chemical Engineering
National Taipei Institute of Technology, 1982
M.Sc. in Chemical Engineering
National Taiwan University, 1986
M.Sc. in Materials Science
University of Wisconsin-Madison, 1989
Ph.D. in Materials Science
University of Wisconsin-Madison, 1991

**Research and Professional Interests**

Crystal Growth
Solar silicon material
Modeling and simulation
Semiconductor Solar Cells and Materials
Transport Phenomena

**Journal Papers**

1. Y.M.Yang, A.Yu, B.Hsu, W.C.Hsu, A.Yang, **C.W.Lan**, Development of high-performance multicrystalline silicon for photovoltaic industry, *Prog. Photovoltaics*, 23(3), 340-351 (2015)

2. C.F. Yang, H.P. Hsu, **C.W. Lan**, A rapid thermal process for silicon recycle and refining from cutting kerfloss slurry waste, *Sep. Purif. Technol.*, 149,(2015) 38-46 (SCI,EI)

3. S.Y. Yeh and **C.W. Lan**, Adaptive phase-field modeling of anisotropic wetting with line tension at the triple junction, *Langmuir*, 31 (2015) 9348-9355 (SCI,EI)

4. C.C. Hsieh, Y.C.Wu, A.Lan, H.P.Hsu, C.Hsu, **C.W.Lan**, Comparison of defect formations in solar silicon growth from small random and large oriented seeds, *J. Cryst. Growth*, 419, (2015) 1–6 (SCI,EI)

5. M.C. Wu, C.F. Yang, **C.W. Lan**, Minority lifetime degradation of silicon wafers after electric zone melting, *J. Cryst. Growth*, 420, (2015) 74–79 (SCI,EI)

6. H.K. Lin, M.C. Wu, C.C. Chen, **C.W. Lan**, Evolution of grain structures during directional solidification of silicon wafers, *J. Cryst. Growth*, 439 (2016) 40-46 (SCI,EI)

7. **C.W. Lan**, Y.F. Yang, H.K. Lin, H.P. Hsu, B. Hsu, C. Hsu, Engineering silicon crystals for photovoltaics, *CrystEngComm*, invited highlight review, 18, (2016) 1474-1485 (SCI)

8. **C.W. Lan**, Y.M. Yang, A. Yu., W.C. Wu, B. Hsu, W.C. Hsu, A. Yang, Recent progress of crystal growth technology for multi-crystalline silicon solar ingot, *Solid State Phenomen.*, 242, (2016) 21-29 (EI)

9. G.Y. Chen, H.K. Lin, **C.W. Lan**, Phase-field modeling of twin-related faceted dendrite growth of silicon, *Acta Mater.*, 115 (2016) 324-332 (SCI, EI)

10. G.Y. Chen, **C.W. Lan**, On the growth orientation of twin-related faceted dendrites, *Scripta Mater.*, 125 (2016) 54–57

11. G.Y. Chen, H.K. Lin, **C.W. Lan**, Understanding the facet formation mechanisms of Si thin-film solidification through three-dimensional phase-field modeling, *J. Cryst. Growth* (2016) in press (SCI, EI)

12. **C.W. Lan**, A. Lan, C.F. Yang, H.P. Hsu, M. Yang, A. Yu, B. Hsu, C. Hsu, A. Yan, The emergence of high-performance multi-crystalline silicon in photovoltaics, *J. Cryst. Growth* (2016) in press (SCI, EI)

13. C.F. Yang, M.G. Tsoutsouva, H.P. Hsu, **C.W. Lan**, Infrared measurement of undercooling during silicon solidification on bare and $Si_3N_4$ coated quartz substrates, *J. Cryst. Growth* 453 (2016) 130-137 (SCI,EI)

14. Y. C. Wu, A. Lan, C. F. Yang, C. W. Hsu, C. M. Lu, A. Yang, and **C. W. Lan**, Effect of seed arrangements on the quality of n‑type monolike silicon grown by directional solidification, *Cryst. Growth Des*. 16 (2016) 6641−6647 (SCI, EI)

15. **C.W. Lan**, A. Lan, C.F. Yang, H.P. Hsu, M. Yang, A. Yu, B. Hsu, W.C. Hsu, A. Yang, The emergence of high-performance multi-crystalline silicon in photovoltaics, *J. Cryst. Growth* 468 (2017) 17-23 (SCI, EI)

16. C.Y. Lan, Y.C. Wu, A. Lan, C.F. Yang, C. Hsu, C.M. Lu, A. Yang, **C.W. Lan**, Control of ingot quality and solar cell appearance of cast mono-like silicon by using seed partitions, *J. Cryst. Growth* 475 (2017) 136-143 (SCI, EI)

17. H.K. Lin, **C.W. Lan**, Phase field modeling of grain structure evolution during directional solidification of multi-crystalline silicon sheet, *J. Cryst. Growth* 475 (2017) 150-157 (SCI, EI)

18. H.K. Lin, **C.W. Lan**, Revisiting the twinning mechanism in directional solidification of multi-crystalline silicon sheet, *Acta Mater.* 131 (2017) 1-10 (SCI, EI)

19. G.Y. Chen, **C.W. Lan**, Understanding the facet formation mechanisms of Si thin-film solidification through three-dimensional phase-field modeling, *J. Cryst. Growth* 474 (2017) 166–170 (SCI, EI)

20. S. P. Phang, H. C. Sio, C. F. Yang, **C. W. Lan**, Y. M. Yang, Andy W. H. Yu, Bruce S. L. Hsu, Chuck W. C. Hsu, and D. Macdonald, N-type high-performance multicrystalline and mono-like silicon wafers with lifetimes above 2 ms, *Jpn. J. Appl. Phys.* 56 08MB10

21. H.K. Lin, **C.W. Lan**, A multilayer nucleation model for twinning during directional solidification of multi-crystalline silicon, *J.Cryst. Growth* 478 (2017) 47–51 (SCI, EI)

22. T. Jain, H.K. Lin, **C.W. Lan**, Three dimensional modelling of grain boundary interaction and evolution during directional solidification of multi-crystalline silicon, *J. Cryst. Growth* 485 (2018) 8-18 (SCI, EI)

23. T. Jain, H.K. Lin, **C.W. Lan**, Twinning mechanism at three-grain tri-junction during directional solidification of multi-crystalline silicon, *Acta Mater.* 144 (2018) 41-50 (SCI, EI)

24. J. W. Jhang, T. Jain, H. K. Lin, and **C. W. Lan**, Possible twinning operations during directional solidification of multicrystalline silicon, *Cryst. Growth Des.* 18 (2018) 2518-2524 (SCI, EI)

25. T-J. Liao, Y.S. Kang, **C.W. Lan**, In situ observation of crystal/melt interface and infrared measurement of temperature profile during directional solidification of silicon plate, *J. Cryst. Growth*, 499 (2018) 90-97 (SCI, EI)

26. H.L. Yang, I.T. Liu, C.E. Liu, H.P. Hsu, **C.W. Lan**, Recycling and reuse of kerf-loss silicon from diamond wire sawing for photovoltaic industry, *Waste Management*, 84 (2019) 204-210 (SCI, EI)

27. A. Lan, C.E. Liu, H.L. Yang, H.T. Yu, I.T. Liu, H.P. Hsu, **C.W. Lan,** Silicon ingot casting using reusable silicon nitride crucibles made from diamond wire sawing kerf-loss silicon, *J. Cryst. Growth*, 525 (2019) 125184 (SCI, EI)

28. J.W. Jhang, **C.W. Lan**, Three-dimensional phase field modelling of twin nucleation during directional solidification of multi-crystalline silicon, *J. Cryst. Growth*, 520 (2019) 33−41 (SCI, EI)

29. J.W. Jhang, G. Regula, G. Reinhart, N. Mangelinck-Noël, **C.W. Lan**, Heterogeneous twinning during directional solidification of multi-crystalline silicon, *J. Cryst. Growth*, 508 (2019) 42−49 (SCI, EI)

30. C.E. Liu, W.C. Lan, H.T. Yu, H.L. Yang, I.T. Liu, H.P. Hsu, **C.W. Lan**, Making reusable reaction-bonded silicon nitride crucibles for silicon casting from kerf-loss silicon waste, *Int J Appl Ceram Technol*., 17 (2020) 146-152 (SCI)

31. Victor Lau Jr., Kensaku Maeda, Kozo Fujiwara, **Chung-wen Lan**, In situ observation of the solidification interface and grain boundary development of two silicon seeds with simultaneous measurement of temperature profile and undercooling, , *Journal of Crystal Growth*, 532 (2020) 125428 (SCI, EI)

**Conference Papers**

1. C. F. Yang, H.P. Hsu, and **C. W. Lan**, Infrared measurement of undercooling during silicon solidification on a quartz substrate with different coatings, CSSC8, May 5-8, 2015, Bamberg, Germany

2. H.K. Lin, M. C. Wu, C.C. Chen, **C.W. Lan**, Evolution and interaction of grain boundaries in electric zone melting crystallization of silicon wafers, CSSC8, May 5-8, 2015, Bamberg, Germany.(invited speech)

3. **C.W. Lan**, Y. M. Yang, A. Yu, B. Hsu, W.C. Hsu, A. Yang, Recent progress of high-performance multi-crystalline silicon for photovoltaic industry, CSSC8, May 5-8, 2015, Bamberg, Germany (invited keynote)

4. Hua-Kai Lin (林華愷**)**、**C.W. Lan (藍崇文)**, Phase field modeling of grain competition and grain boundary evolution during directional solidification of silicon, 2015 輸送現象及其應用專題研討會, 9/8-9, 台北, 台灣

5. Shu-Yu Yeh (葉書佑)、C**hung-Wen Lan (藍崇文)** , Adaptive phase field modeling of anisotropic wetting with line tension, 2015 輸送現象及其應用專題研討會, 9/8-9, 台北, 台灣

6. Jing-Yi Lin (林京誼)、**Chung-Wen Lan(藍崇文)** , Phase-field modeling of electric

zone melting of Si wafers, 2015 輸送現象及其應用專題研討會, 9/8-9, 台北, 台灣

7. **C.W. Lan**, M. Yang, A. Yu, B. Hsu, C. Hsu, W.C. Chang, A. Yang, High-performance multi-crystalline silicon photovoltaics: Production advances from wafers to modules, EUPVSEC 2015, Sep. 14-18, 2015, Hamburg, Germany

8. C.C. Hsieh, Y.C. Wu, A. Lan, H.P. Hsu, C. Hsu, **C.W. Lan**, Comparison of defect formations in solar silicon growth from small random and large oriented seeds, EUPVSEC 2015, Sep. 14-18, 2015, Hamburg, Germany

9. **C.W. Lan**, Y. M. Yang, A. Yu, B. Hsu, W.C. Hsu, A. Yang, Recent progress of crystal growth technology for multi-crystalline silicon solar ingot, GADEST 2015, Sep. 20-25, 2015, Bad Staffelstein, Germany (invited keynote)

10. **C.W. Lan**, Y.M. Yang, A. Yu, Y.C. Wu, B. Hsu, W.C. Hsu and A. Yang, The emerging of high-performance multi-crystalline silicon photovoltaics, PVSEC25, Nov. 16-20, 2015, Busan, Korea (plenary speech)

11. **C.W. Lan**, 結晶 Si 太陽電池( 仮 ), The 7th thin film PV Seminar in 2016, Mar. 13-15, Yonezawa, Japan. (plenary speech)

12. **C.W. Lan**, Dendritic, High performance multi-crystalline, and mono-like silicon casting: A few things we learned from there, SMS 2016, May 18-20, Sendai, Japan. (plenary speech)

13. Y.C. Wu, A. Lan, C.F. Yang, C. Hsu, C.M. Lu, A. Yang, **C.W. Lan**, The effect of seed arrangements on the ingot quality of n-type mono-like silicon grown by directional solidification, EUPVSEC, Jun. 20-24, 2016, Munich, Germany.

14. **C.W. Lan**, M. Yang, A. Yu, B. Hsu, C. Hsu and A. Yang, The emergence of high-performance multi-crystalline silicon in photovoltaics, ICCGE18, Aug. 7-12, 2016, Nagoya, Japan. (plenary speech)

15. K.Y. Chen and **C.W. Lan**, Phase-field modeling of twin-related faceted dendrite growth, ICCGE18, Aug. 7-12, 2016, Nagoya, Japan.

16. H.K. Lin and **C.W. Lan**, Phase field modeling of grain boundary evolution during directional solidification of silicon film, ICCGE18, Aug. 7-12, 2016, Nagoya, Japan.

17. **C.W. Lan**, Y.M. Yang, A. Yu, B. Hsu, W.C. Hsu, A. Yang, P. Phang, D. Macdonald, High-performance multi-crystalline silicon crystal growth: recent experimental and theoretical progress, CSSC9, Oct. 10-12, 2016, Arizona, USA (invited speech)

18. **C.W. Lan**, The Emergence of high-performance multi-crystalline silicon in photovoltaics, PV Taiwan, Oct. 13, 2016, Taipei, Taiwan.

19. Y.C. Wu, A. Lan, C.F. Yang, C. Hsu, J.M. Lu, A. Yang, **C.W. Lan,** The effect of seed arrangements on the ingot quality of n-type mono-like silicon grown by directional solidification, PVSEC 26, Oct. 24-28, 2016, Singapore. (invited speech)

20. Sieu Pheng Phang, Hang Cheong Sio, C.F. Yang, **C.W. Lan**, Y.M. Yang, A. Yu, B. Hsu, C. Hsu, Daniel Macdonald, N-type high-performance multi-crystalline and quasi-monocrystalline silicon wafers with lifetimes above 2ms, PVSEC 26, Oct. 24-28, 2016, Singapore.

21. C.F. Yang, P.C. Tsai, C.M. Lu, W.C. Chang, Y.M. Yang, A. Yu, B. Hsu, C. Hsu, **C.W.**

**Lan**, Surface activation and gettering of multi-crystalline silicon wafers from diamond and slurry wire slicing, PVSEC 26, Oct. 24-28, 2016, Singapore.

22. P.C. Tsai, C.F. Yang, G. Peramaiyan, R. Ganthi, **C.W. Lan**, HF–$HNO_3$–$H_2SO_4$ system for texturing diamond wire sawn multi-crystalline silicon wafer, PVSEC 26, Oct. 24-28, 2016, Singapore.

23. H.Y. Hou, K.M. Cheng, H.P. Hsu, **C.W. Lan**, Low-temperature kerf-loss silicon spalling by inducing thermal-mismatch Stress, PVSEC 26, Oct. 24-28, 2016, Singapore.

24. **C.W. Lan**, Recent progress of high performance multi-crystalline silicon for photovoltaic industry, SNEC 2017, Apr. 17-20, 2017, Shanghai. (plenary speech)

25. H.K. Lin, **C.W. Lan**, Phase field modeling of grain structure evolution during directional solidification of multi-crystalline silicon sheet, ACCGE21, Jul. 30-Aug. 4, 2017, Santa Fe, New Mexico, USA. (invited speech)

26. H.K. Lin, **C.W. Lan**, Revisiting the twinning mechanism in directional solidification of multi-crystalline silicon sheet, ACCGE21, July 30 - August 4, 2017, Santa Fe, New Mexico, USA.

27. C. Y. Lan, Y.C. Wu, W.C. Lan, C.F. Yang, W.C. Hsu, C.M. Lu, A. Yang, **C.W. Lan**, Control of ingot quality and cell appearance for mono-like silicon casting by using seed partitions, EUPVSEC 2017, Sep. 25 – 29, Amsterdam, The Netherlands.

28. C. Y. Lan, C.F. Yang, A. Lan, C. Hsu, A. Yang, **C.W. Lan**, Reusable $Si_3N_4$ crucibles made from kerf-loss silicon for multi-crystalline silicon growth, EUPVSEC 2017, Sep. 25 – 29, Amsterdam, The Netherlands.

29. **C.W. Lan**, Recent progress and challenges of cast silicon for photovoltaic industry, PVSEC 27, Nov. 12-17, Japan. (invited speech)

30. Y. Z. Liu, C. Y. Lan, C.F. Yang, A. Lan, C. Hsu, **C.W. Lan**, Reusable $Si_3N_4$ crucibles made from kerf-loss silicon for multi-crystalline silicon growth, PVSEC 27, Nov. 12-17, Japan.

31. Han-Lin Yang, I-Tseng Liu, **Chung-Wen Lan**, Recovery of kerf-loss silicon from diamond wire sawing, CSSC10, Apr. 8-11, 2018, Japan.

32. Pei-Yu Sun, Pi-Chen Tsai, Hsiao-Ping Hsu, A. Sutejo, A. Yang, **Chung-Wen Lan**, Green black silicon texturing for multi-crystalline silicon wafer, CSSC10, Apr. 8-11, 2018, Japan.

33. Ting-Jang Liao, **Chung-Wen Lan**, In situ observation of crystal/melt interface and infrared measurement of temperature profile during directional solidification of siliicon plate, CSSC10, Apr. 8-11, 2018, Japan.

34. Yun-Wei Jhang, Tapas Jain, Hua-Kai Lin, **Chung-Wen Lan**, Possible twinning operations during directional solidification of multi-crystalline silicon, CSSC10, Apr. 8-11, 2018, Japan.

35. I-Tseng Liu, Han-Lin Yang, Ken-Hsuan Lee, **Chung-Wen Lan**, Reusable nitride bonded silicon nitride(nbsn) crucible made from recycled silicon of diamond wire sciling in pilot-scale, CSSC10, Apr. 8-11, 2018, Japan.

36. **C.W. Lan**, P.Y. Sun, H.P. Hsu, A. Yang, Recent Progress and challenges of casting technology for silicon, CSSC10, Apr. 8-11, 2018, Japan. (invited speech)

37. **C.W. Lan**, Recent progress and challenges of casting technology for silicon photovoltaics, SNEC, May26-30, 2018, China. (invited speech)

38. P.Y. Sun, P.C. Tsai, H.P. Hsu, A. Sutejo, A. Yang, **C.W. Lan**, Green black silicon

texturing for multi-crystalline silicon wafer, Jun. 9-17, 2018, USA.

39. P.Y. Sun, P.C. Tsai, H.P. Hsu, A. Sutejo, A. Yang, **C.W. Lan**, Green black silicon texturing for multi-crystalline silicon wafer, EUPVSEC, Sep.22-28, 2018, Belgium.

40. **C.W. Lan**, Bulk crystal growth from the melt, the summer school of crystal growth Jul.21-22, 2018, China. (invited speech)

41. **C.W. Lan**, High-Performance Multi-crystalline Silicon, CCCG-18, Jul. 23-25, 2018, China. (invited speech)

42. T. Jain, H.K. Lin, J.W. Jhang, **C.W. Lan**, Phase field modeling of grain boundary interaction and evolution during directional solidification of multi-crystalline silicon, IWMCG-9, Oct. 20-25, 2018, USA. (invited speech)

43. **C.W. Lan**, High performance multi-crystalline silicon and beyond, MRS, Nov. 23-30,2018, USA. (invited speech)

44. **C.W. Lan**, High performance multi-crystalline silicon and beyond, MRS, Nov. 23-30,2018, USA. (invited speech)

45. **C.W. Lan**, Bulk cystal growth from the melt, 17$^{th}$ International summer school on crystal growth, Jul. 21-27, 2019, USA. (invited speech)

46. C.E. Liu, H.T. Yu, H.L. Yang, **C.W. Lan**, Silicon ingot growth from nitride crucibles made from kerf-loss silicon during diamond wire sawing, ICCGE-19, Jul. 27-Aug. 2, 2019, USA.

47. V.L. Jr, **C.W. Lan**, In situ observation of the solidification interface and grain boundary development of two silicon seeds with simultaneous measurement of temperature profile and undercooling, ICCGE-19, Jul. 27-Aug. 2, 2019, USA.

48. H.L. Yang, **C.W. Lan**, Study of dip casting for multi-crystalline silicon, ICCGE-19, Jul. 27-Aug. 2, 2019, USA.

49. C.E. Liu, H.T. Yu, H.L. Yang, **C.W. Lan**, Silicon ingot growth from nitride crucibles made from kerf-loss silicon during diamond wire sawing, EUPVSEC, Sep. 9-13, 2019, France.

50. A. Sutejo, H.P. Hsu, **C.W. Lan**, Texturing monocrystalline silicon wafer to generate inverted pyramid, EUPVSEC, Sep. 9-13, 2019, France.

51. S. Kubendhiran, H.P. Hsu, **C.W. Lan**, Metal assisted micro-scale inverted pyramids texturization of monocrystalline silicon for highly efficient light trapping, TwIChE, Nov. 8-9, 2019, Taiwan.

52. Victor Lau Jr, K. Maeda, K. Fujiwara, and **C.W. Lan**, In situ observation of the solidification interface and grain boundary development of two silicon seeds with simultaneous measurement of temperature profile and undercooling, TwIChE, Nov. 8-9, 2019, Taiwan.

53. C.E. Liu, H.T. Yu, H.L. Yang, C.W. Lan, Silicon ingot growth from nitride crucibles made from kerf-loss silicon during diamond wire sawing, TwIChE, Nov. 8-9, 2019, Taiwan.

**Books**

1. **C.W. Lan**, C.K. Hsieh, C. Hsu, Czochralski silicon crystal growth for photvoltaics

applications, in Ch. 2 of *Crystal Growth for Solar Cells*, Edited by K. Nakajima, N. Usami, Springer-Verlog, 2009.

2. **C.W. Lan,** Multiplicity and flow bifurcations in bridgman and zone-melting crystal growth, in "*Studies on flow instabilities in bulk crystal growth*" Edited by A. Gelfgat, Research Signpost, 2008.

3. **C.W. Lan**, Convections and control in melt growth of crystals, in Ch. 36 of "*Handbook of Crystal Growth*" edited by G. Dhanaraj, K. Byrappa, V. Prasad, and M. Dudley, Springer, 2010.

4. **C.W. Lan**, C. Hsu, K. Nakajima, Multi-crystalline silicon crystal growth for photovoltaic applications, in Ch. 10 of "*Handbook of Crystal Growth*" Vol. II. edited by T. Nishinaga, P. Rudolph, 2015.

5. **C.W. Lan**, Growth of multicrystalline silicon: The high-performance casting method, in Ch. 8 of "*Handbook of Photovoltaic Silicon*" edited by Deren Yang, 2017.

**Honors and Others**

1. 2019 年傑出人才發展基金會之「傑出人才講座」。

2. 2019 年台大化工系陳芳燦講座。

3. 2019 年台灣化工學會的會士。

4. 2017 年藍教授在台灣太陽光電產業協會的推薦下，也榮獲亞洲光伏協會兩年一評的『技術成就獎』。

5. 2017 宗倬章講座教授。

6. 2016 ICCGE 世界長晶學會最高榮譽 Laudise Prize，IOCG 每三年評獎一次，Laudise Prize 是獎勵技術貢獻者。

7. 2016 第 23 屆東元獎。

8. 105 年國家發明創作獎的發明銀牌獎。

9. Best Presentation Award, The 26th International Photovoltaic Science and Engineering (PVSEC-26), Singapore 2016.

10. Plenary Speaker, The 25th International Photovoltaic Science and Engineering (PVSEC-25), Busan, Korea 2015 (also member of International Advisory Committee of PVSEC).

11. Conference co-chair, The 6th International Workshop on Crystal Growth technology, Jun. 14-20, 2014, Berlin, Germany

12. Conference Chair, The 23th International Photovoltaic Science and Engineering (PVSEC-23), 2013, Taipei (also member of International Advisory Committee of PVSEC).

13. 指導學生楊家福同學參加 IUMRS-ICEM 2014 獲得最佳海報獎

14. 臺灣大學終身特聘教授 (2013-)

15. Conference Chair, the 7th International Workshop on Modeling in Crystal Growth, Oct. 28-31, 2012, Taipei (Co-Chair of 4th International Workshop on Modeling in Crystal Growth, Fukuoka, Japan, Oct. 5-7, 2003) (also member of Advisory Committee of the International Conference in Crystal Growth (ICCG) 2013 in Warsaw, Poland and 2016 Nagoya, Japan).

16. 指導學生林華愷同學參加 IWMCG7 獲得最佳海報獎

17. Plenary Speaker, 2nd International Conference on Materials for Energy - EnMat II, May 12-16, 2013, Karlsruhe Germany.

18. Plenary Speaker, 27th European PV Solar Energy Conference and Exhibition - EUPVSEC, Development of High-Quality Multi-crystalline Silicon for PV, Sep. 24-28, 2012, Frankfurt, Germany.

19. 2011 台灣化學工程學會金開英獎

20. Associate Editor, Journal of Crystal Growth, (2011- now).

21. Guess Editor, Special Issue in High Efficiency Silicon Solar Cells for J. of Photoenergy (2011).

22. International Editor, Korean Journal of Crystal Growth, (2001-now)

23. 2010 中國工程師學會傑出工程教授獎

24. 臺灣大學特聘教授 (2007-2013)

25. 台灣太陽光電產業協會創會終身名譽理事長 (2010-now)

26. SEMI Taiwan, PV Committee, Vice Chairman (2008-2012)

27. 國科會傑出研究學者研究計畫主持人(2008-2011)

28. 台灣太陽光電產業協會第一任及第二任理事長 (2007-2010)

29. 工研院太陽光電中心主任(2007-2010)

30. Associate Editor in Chief, J. ChIChE, (2000-2009).

31. 2008, 2009, 2010, 2011 台灣 SEMI 委員會貢獻獎

32. 2008 台灣化學工程學會賴再得獎

33. Editor, Fluid Dynamics and Materials Processing, 2005-2007.

34. 國科會傑出研究獎, (2004-2007).

35. 亞洲晶體生長科學與技術協會第四任主席(2005-2007)

**International Cooperation Project**

1. 台俄雙邊合作計畫(協同主持人), 2005/8/1~2008/7/31.
2. 台法雙邊幽蘭計畫(主持人), 2006/8/1~2007/7/31
3. 台法雙邊幽蘭計畫(主持人), 2016/1/1~2017/12/31