Resume

Full name:	David Greenblatt
Professional title:	Associate Professor
Professional Address:	Faculty of Mechanical Engineering, Technion, IIT, Haifa
Telephone:	+972 (0)4 829 3473
email:	davidg@technion.ac.il
Web site:	www.flowcontrollab.com

ACADEMIC DEGREES

Ph.D., 1995-1999: Department of Fluid Mechanics and Heat Transfer, Tel Aviv University

M.Sc., 1987-1990: School of Mechanical Engineering, University of the Witwatersrand, Johannesburg, South Africa

B.Sc., 1983-1986: School of Mechanical Engineering, University of the Witwatersrand, Johannesburg, South Africa

ACADEMIC APPOINTMENTS

2012- : Associate Professor with Tenure, Faculty of Mechanical Engineering, Technion, IIT, Haifa

2007-2012: Senior Lecturer, Faculty of Mechanical Engineering, Technion, IIT, Haifa

2006-2007: Adjunct Lecturer, Technical University of Berlin

2001-2002: Lecturer, Department of Fluid Mechanics and Heat Transfer, Tel Aviv University

1995-2000: Junior Faculty Member, Department of Fluid Mechanics and Heat Transfer, Tel Aviv University

PROFESSIONAL EXPERIENCE

2005-2007: Senior Scientist, Institute of Fluid Mechanics and Acoustics, Technical University of Berlin

2002-2005: NRC Research Associate, Flow Physics and Control Branch, NASA Langley Research Center (LaRC), Hampton VA, USA

2001-2004: Honorary Research Fellow, University of the Witwatersrand, SA

2000-2002: Post-Doctoral Fellow, Tel Aviv University, Israel

2000-2001: Senior Research Associate, IIT, Chicago IL, USA

1994-1995: Software Developer, B. A. Intelligence Networks, Ra'anana, Israel

1988-1994: Technical Specialist, Council for Scientific and Industrial Research (CSIR), South Africa

RESEARCH INTERESTS

Active and passive flow control, unsteady aerodynamics, wind turbine aerodynamics.

Turbo-machinery flows, jet noise, combustion and mixing.

Turbulence modeling, transition and relaminarization.

High-lift and high-alpha aerodynamics.

TEACHING EXPERIENCE

2001-2002: Introduction to Aerodynamics (undergraduate course), Tel Aviv University

2005-2006; 2006-2007: Introduction to Active Flow Control (graduate course), Technical University of Berlin

2007-2008: Thermodynamics I (undergraduate course: 034035), Technion

2008-2010: Fluid Mechanics I (undergraduate course: 034013), Technion

2008-2013: Introduction to Experimental Methods (undergraduate course: 034038), Technion

2010-2013: Fluid Mechanics II (undergraduate course: 035035), Technion

2010-2011: Laboratory in Experimental Methods (undergraduate course: 034039), Technion

Design of New Technion Course

2008-2014: Flow Control (graduate/undergraduate course: 036-064), Technion

DEPARTMENTAL ACTIVITIES

2007- : Founder and Director of the Technion's *Flow Control Laboratory*.
www.flowcontrollab.com

2013-2014: Vice Dean for Undergraduate Studies, Faculty of Mechanical Engineering

Administrative Duties

2008- : Liaison with the Technion Aerospace Faculty

2008-2013: Foreign Students Coordinator

2010-2012: International and School Visitor Coordinator

2011- : Faculty Liaison with Industry

2012-2013: Responsible for Faculty Seminars

PUBLIC PROFESSIONAL ACTIVITIES

Journal Editorial Boards

2010- : Editorial Board: *International Journal of Flow Control (Founded 2009)*
www.multi-science.co.uk/ijfc.htm

2010-2014: Editorial Board: *International Journal of Fluid Dynamics and Aerospace Engineering (Founded 2010)*
www.ijfdae.org/

Conference Chairmanship

2013: Conference Co-chairman: Advances in Rotor Blades for Wind Turbines, 2nd International Conference, 25-27 February 2013, Park Hotel Bremen, Germany. (Co-chairman with Dr. Lars Fuglsang, LM Wind Power Group, Denmark).

Journals Reviewer

Reviewer for the following International Journals: AIAA Journal, Flow Turbulence and Combustion, AIAA Journal of Aircraft, International Journal of Heat and Fluid Flow, Experiments in Fluids, Journal of the American Helicopter Society, Physics of Fluids, International Journal of Flow Control, Journal of Fluid Mechanics, Industrial & Engineering Chemistry Research, Journal of Fluids Engineering, Experimental Thermal and Fluid Science, Aerospace Science and Technology Journal, International Journal of Fluid Dynamics and Aerospace Engineering, Journal of Aerospace Engineering, IMechE, Part G, Journal of Fluids and Structures, Computers and Fluids.

International Committees

2008: International Advisory Board: The 2nd International Conference on Jets, Wakes and Separated Flows, ICJWSF-2008, Technical University Berlin, September 16-19, 2008, Berlin, Germany.

2014: Scientific Committee: The 4th International Conference on Experimental Fluid Mechanics, Beijing University of Aeronautics and Astronautics (BUAA), August 12-15, 2014, China.

2015: Program Committee, 56th Israel Annual Conference on Aerospace Sciences, March 9-10, 2015, Tel Aviv and Haifa, Israel.

2015: International Program Committee, 14th World Wind Energy Conference and Exhibition, 26-28 October, 2015, Jerusalem, Israel.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Associate Fellow: AIAA

Member: American Physical Society

Registered Mechanical Engineer (Israel)

HONORS & AWARDS

2012: First Prize Winner in the Renewable Energy Category at the First Israel National Conference for Sustainable Growth

2008: Sanford Kaplan Prize for Creative Management of 21st Century High Technology (Faculty of Industrial Engineering and Management, Technion, IIT)

2004: NASA AAAC Team Award (CFD Validation Workshop)

2002, 2003, 2004-2005: NRC Associateship Award, NASA Langley Research Center

2001-2004: Honorary Research Fellowship, University of the Witwatersrand, SA

2000-2002: Immigrant Scientist Scholarship (Israel)

1995-1999: Hammerly Family Scholarship (Israel)

1987-1988: Senior Scholarship, University of the Witwatersrand, SA

GRADUATE STUDENTS

Completed Dr.-Ing. Theses: TU Berlin

1. Stefan Vey, “Low aspect ratio wing flow control at low Reynolds numbers,” (with C.O. Paschereit), August 2013.

2. Christoph Strangfeld, "Active control of trailing vortices by means of long- and short-wavelength actuation," (with C.O. Paschereit), April 2015.

Completed MSc. or Diploma Theses (MSc. Equivalent): TU Berlin

1. Yogesh Singh, "Active management of entrainment and streamwise vortices in an incompressible jet," MSc. Thesis (with C.O. Paschereit and D. Das, Indian Institute of Technology), July 2006.

2. Chan Yong Schüle, "Dielectric barrier discharge plasma actuation at very low flight Reynolds numbers," Diploma Thesis (with C.O Paschereit), TU-Berlin, May 2007.

3. Stefan Vey, "Flap-edge vortex management on a swept high-lift system," Diploma Thesis (with C.O Paschereit), TU-Berlin, July 2007.

4. Karthik Depuru Mohan, "Jet control via active flaps and passive tabs," Diploma Thesis, TU-Berlin (with C.O. Paschereit and C.N. Nayeri), July 2007.

5. Torsten Schneider, "CFD for plasma actuation on micro air vehicles," Diploma Thesis, TU-Berlin (with C.O. Paschereit), June 12, 2007.

Completed PhD. Theses: Technion

1. Hanns Müller-Vahl, "Wind Turbine Blade Dynamic Stall and its Control" PhD., June 2015 (co-advisor. Prof. Dr.-Ing. C.O. Paschereit, Joint PhD program at Technion and TU Berlin). http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=28151

Completed MSc. Theses: Technion

1. Iliya Romm, "Subcritical pipe flow transition control using dielectric barrier discharge plasma actuators," February 2010.
www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=26262

2. Magen Schulman, "Dynamic stall control on a vertical axis wind turbine using dielectric barrier discharge plasma actuators," August, 2011.
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=26968

3. Binyamin Sasson, "Vertical axis wind turbine performance improvement via leading-edge slot blowing" March, 2012.
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=26583

4. Alexander Treizer, "Generation of energy by the active control of flow over a cylindrical pendulum," September, 2012.
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=27173

5. Snir Goyta, "Tethered cube stabilization by means of active flow control," September, 2012.
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=27648

6. Amos Ben Harav, "Optimization of a pulsed-plasma controlled vertical axis wind turbine," September, 2012.
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=28185

7. Gilad Doron, "A reciprocating wind energy generator driven by flow control," March, 2013.
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=27794

8. Amit Katz, "Active flow control of vortex induced vibrations of a tethered sphere in a steady fluid flow," (co-advisor with Dr. Rene van Hout, May, 2013).
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=26353

9. Alexander Eidelman, "Development of a reciprocal motion wind-energy generator," October, 2013.
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=27198

10. Alexander Shapira, "Investigation of the turbulent aspects in a pulse tube cryogenic system," September, 2013 (co-advisor Prof. Gershon Grossman).
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=27238

11. David Elatov, "Separation control in a centrifugal fan using plasma actuator," May, 2013.
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=28519

12. Ronen Lautman, "Combined upwind/downwind plasma-based flow control on a vertical-axis wind turbine," July, 2014.
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=28130

13. Yevgeni Furman, "Progress in the development of a low-speed oscillatory-flow wind tunnel," December 2014.
http://www.graduate.technion.ac.il/Theses/Abstracts.asp?Id=27802

14. Ron Danon, "Coandă-based reciprocating wind energy generator," July 2015

15. Mark Epshtein, "Inlet guide vane separation control using dielectric barrier discharge plasma actuators," October 2015.

Theses in Progress

PhD Students

1. Oshri Ifergan, "Flow characterization in a hot plasma wind tunnel," in progress from 2013).

MSc Students

1. Ben Eshel, "Closed-loop control of a plasma-enhanced vertical axis wind turbine," (in progress from 2013).

2. Anan Garzuzi, "Exploitation of the Coandă effect for wind energy generation" (in

progress from 2014).

Completed Technion ME Projects

1. David Ripa, "Active load control for wind power," ME Project, January 2010.

2. Oren Fixel, "Two-dimensional laminar flow simulation over a circular cylinder," Project, June 2011.

3. Avi Klein, "Design and manufacture: composite blades for an experimental VAWT," April, 2013.

4. Nitzan Cohen, "Semi-empirical theory for Gurney flaps," September 2015.

EXTERNAL RESEARCH GRANTS

1995-2000: Israel Ministry of Defense, $100,000 (collaborator with A. Seifert and I. Wygnanski)

1999-2001: European Community "IMT" Program (Brite-Euram III), $60,000 (collaborator with B. Nishri and I. Wygnanski)

1999-2001: Boeing, $80,000 (Co-PI with I. Wygnanski)

2000-2001: Boeing, $144,000 (Co-PI with H. Nagib and I. Wygnanski)

2001-2002: US Army, $40,000 (Co-PI with I. Wygnanski)

2002-2004: NASA LaRC, $630,000 (Co-PI with A. Washburn and N. Schaeffler)

2002-2003: NASA LaRC, $300,000 (PI)

2004-2005: NASA LaRC, $375,000 (PI)

2006-1010: German Research Foundation (Jet Noise Control), $140,000 (Co-PI with C.O. Paschereit)

2007-2011: German Research Foundation (Flow Control using DBD Plasma Actuation), $100,000 (Co-PI with C.O. Paschereit)

2010-2011: American Technion Society (VAWT Flow Control), $10,000 (PI).

2010-2011: Mitchell Entrepreneurial Program (Industrial Fan Performance Enhancement Using Dielectric Barrier Discharge Plasma Actuators), $40,000 (PI).

2011-2014: Israel Science Foundation (Experimental Investigation of Airfoil Dynamic Stall and its Control), 234,000NIS (first year) (PI).

2011- : Intel Corporation (Advanced Fan Characterization), $13,000 (PI).

2012- : Grand Technion Energy Program (Horizontal Axis Wind Turbine), $30,000 (PI).

2012- : Teva Pharmaceuticals (Reactions in Turbulent Flows), 48,000 NIS (PI).

2013- : Germany-Israel Foundation (Load control on a horizontal axis wind turbines), €30,000, first year (Co-PI with C.O. Paschereit, TU Berlin).

2013- : US-Israel Binational Science Foundation, $42,700, first year (Co-PI with Dr. Christopher Rumsey, NASA Langley Research Center)

2015- : Israel Ministry of Defense, (Hot Plasma Wind Tunnel Characterization), 160,000 NIS (PI).

PUBLICATIONS

Theses

1. 1987-1989: "Pipe Flow Relaminarization by Temporal Acceleration," M.Sc., Thesis, School of Mechanical Engineering, University of the Witwatersrand, SA (advisor: Prof. E.A. Moss)

2. 1995-1999: "Dynamic Stall Control by Oscillatory Excitation," Ph.D. Thesis, Department of Fluid Mechanics and Heat Transfer, Tel Aviv University (advisor: Prof. I. Wygnanski)

Refereed papers in Professional Journals

1. Greenblatt, D., "The construction and evaluation of a low-cost isokinetic knee exerciser," *The South African Journal of Physiotherapy*, Vol. 48, No. 2, pp. 15-22, 1992.

2. Greenblatt, D., "Computing the combined effect of wake-passing and free-stream turbulence on gas turbine blade boundary layers," *Quaestiones Mathematicae*, Vol. 15, No. 3, pp. 261-278, 1992.

3. Greenblatt, D. and Damelin, S. B., "Laminar boundary layers subjected to high-frequency traveling-wave fluctuations," *AIAA Journal*, Vol. 31, No. 5, pp. 957-959, 1993.

4. Greenblatt, D., "The effects of wake-passing and free-stream turbulence on laminar gas turbine blade boundary layers," *ASME Journal of Turbomachinery*, Vol. 116, No. 3, pp. 384-391, 1994.

5. Greenblatt, D., Diesel, W. and Noakes. T. D., "Clinical evaluation of the low-cost VariCom isokinetic knee exerciser," *Journal of Medical Engineering & Physics*, Vol. 19, Issue 3, pp. 275-280, 1997.

6. Greenblatt, D., "Hybrid turbulence model for unsteady boundary layers," *AIAA Journal*, Vol. 36, No. 3, pp. 481-484, 1998.

7. Seifert, A., Eliahu, S., Greenblatt, D. and Wygnanski, I., "Use of piezoelectric actuators for airfoil separation control," *AIAA Journal,* Vol. 36, No. 8, pp. 1535-1537, 1998.

8. Greenblatt, D. and Moss, E. A., "Pipe-flow relaminarization by temporal acceleration," *Physics of Fluids,* Vol. 11, No. 11, pp. 3478-3481, 1999.

9. Greenblatt, D., Neuburger, D., Wygnanski, I., "Dynamic stall control by intermittent periodic excitation," *AIAA Journal of Aircraft,* Vol. 38, No. 1, 2001, pp. 188-190.

10. Greenblatt, D. and Wygnanski, I., "Use of periodic excitation to enhance airfoil performance at low Reynolds numbers," *AIAA Journal of Aircraft,* Vol. 38, No. 2, 2001, pp. 190-192.

11. Greenblatt, D. and Wygnanski, I., "Dynamic stall control by periodic excitation. Part 1: NACA 0015 Parametric Study," *AIAA Journal of Aircraft,* Vol. 38, No. 3, 2001, pp. 430-438.

12. Greenblatt, D., Nishri, B., Darabi, A. and Wygnanski, I., "Dynamic stall control by periodic excitation. Part 2: Mechanisms," *AIAA Journal of Aircraft,* Vol. 38, No. 3, 2001, pp. 439-447.

13. Greenblatt, D. and Wygnanski, I., "Effect of leading-edge curvature on airfoil separation control," *AIAA Journal of Aircraft,* Vol. 40, No. 3, 2003, pp. 473-481.

14. Greenblatt, D. and Moss, E. A. "Rapid transition to turbulence in pipe-flows accelerated from rest," *Journal of Fluids Engineering,* Vol. 125, November, 2003, pp. 1072-1075.

15. Greenblatt, D. and Moss, E. A. "Rapid temporal acceleration of a turbulent pipe flow," *Journal of Fluid Mechanics,* Vol. 514, 2004, pp. 65-75.

16. Margalit, S., Greenblatt, D., Seifert, A. and Wygnanski, I., "Delta wing stall and roll control using segmented piezoelectric fluidic actuators," *AIAA Journal of Aircraft,* Vol. 42, No. 3, 2005, pp. 698-709.

17. Naughton, J., Viken, S. and Greenblatt, D., "Skin-friction measurements on the NASA hump model," *AIAA Journal,* Vol. 44, No. 6, 2006, pp. 1255-1265.

18. Greenblatt, D., Paschal, K., Yao, C., Harris, J., Schaeffler, N., and Washburn, A., "A separation control CFD validation test case Part 1: Baseline and steady suction," *AIAA Journal,* Vol. 44, No. 12, 2006, pp. 2820-2830.

19. Greenblatt, D., Paschal, K., Yao, C., Harris, J., "A separation control CFD validation test case part 2: Zero efflux oscillatory blowing," *AIAA Journal,* Vol. 44, No. 12, 2006, pp. 2831-2845.

20. Greenblatt, D., "Managing flap vortices via separation control," *AIAA Journal,* Vol. 44, No. 11, 2006, pp. 2755-2764.

21. Naim, A., Greenblatt, D., Seifert, A. and Wygnanski, I., "Active control of a circular cylinder flow at transitional Reynolds numbers," *Flow, Turbulence & Combustion*, Vol. 78, Nos. 3-4, June, 2007, pp. 383-407.

22. Greenblatt, D., "Dual location separation control on a semispan wing," *AIAA Journal*, Vol. 45, No. 8, 2007, pp. 1848-1860.

23. Greenblatt, D., Göksel, B., Rechenberg, I., Schüle, C., Romann, D. and Paschereit, C.O., "Dielectric barrier discharge flow control at very low flight Reynolds numbers," *AIAA Journal*, Vol. 46, No. 6, 2008, pp. 1528-1541.

24. Greenblatt, D., Kastantin, Y., Nayeri, C.N. and Paschereit, C.O., "Delta-wing flow control using dielectric barrier discharge actuators," *AIAA Journal*, Vol. 46, No.6, 2008, pp. 1554-1560.

25. Greenblatt, D. and Washburn, A.E., "Influence of finite span and sweep on active flow control efficacy," *AIAA Journal*, Vol. 46, No. 7, 2008, pp. 1675-1694.

26. Greenblatt, D., "Active Control of Tip-Flap Loads," *AIAA Journal*, Vol. 47, No. 3, 2009, pp. 783-788.

27. Lacarelle, A., Faustmann, T., Greenblatt, D., Paschereit, C.O., Lehmann, O., Luchtenburg, D.M. and Noack, B.R., "Spatio-temporal characterization of a conical swirler flow field under strong forcing," *ASME Journal of Engineering for Gas Turbines and Power*, Vol. 131, Issue 3, 2009, 031504 (12 pages).

28. Rumsey, C.L. and Greenblatt, D., "Flow control predictions using URANS modeling: A parametric study," *AIAA Journal*, Vol. 47, No. 9, 2009, pp. 2259-2262.

29. Greenblatt, D., Vey, S., Paschereit, C., Meyer, R., "Flap vortex management using active Gurney flaps," *AIAA Journal*, Vol. 47, No. 12, 2009, pp. 2845-2856.

30. Romm, I., Greenblatt, D. and Ishay, M., "Subcritical pipe flow transition control using dielectric barrier discharge plasma actuators," *International Journal of Flow Control*, Vol. 1, No. 4, 2009, pp. 239-254.

31. Greenblatt, D. and Arzuan, G., "Active control of flow separation in a radial blower," *Journal of Fluids Engineering*, Vol. 132, Issue 5, 2010, 051202 (6 pages).

32. Greenblatt, D., "Active control of leading-edge dynamic stall," *International Journal of Flow Control*, Vol. 2, No. 1, 2010, pp. 21-38.

33. Schüle, C.Y. and Greenblatt, D., "Combined plasma and Gurney flap flow control at very low flight Reynolds numbers," *AIAA Journal*, Vol. 48, No. 11, 2010, pp. 2714-2718.

34. Greenblatt, D., "Application of large Gurney flaps on low Reynolds number fan Blades," *Journal of Fluids Engineering*, Vol. 133, 2011, 021102-1-8 (DOI: 10.1115/1.4003301).

35. Sasson, B. and Greenblatt, D., "Effect of leading-edge slot blowing on a vertical axis wind turbine," *AIAA Journal*, Vol. 49, No. 9, 2011, pp. 1932-1942. DOI: 10.2514/1.J050851.

36. Greenblatt, D., Schulman, M. and Ben Harav, A., "Vertical axis wind turbine performance enhancement using plasma actuators," *Renewable Energy*, Vol. 37, 2012, pp. 345-354. http://dx.doi.org/10.1016/j.renene.2011.06.040.

37. Greenblatt, D., "Fluidic control of a wingtip vortex," *AIAA Journal*, Vol. 50, No. 2, 2012, pp. 375-386. DOI: 10.2514/1.57285.

38. Greenblatt, D., Avraham, T. and Golan, M., "Computer fan performance enhancement via acoustic perturbations," *International Journal of Heat and Fluid Flow*, Vol. 34, 2012. pp. 28-35. http://dx.doi.org/10.1016/j.ijheatfluidflow.2011.12.003.

39. Greenblatt, D., Treizer, A., Eidelman, A. and Mueller-Vahl, H., "Flow-control-induced vibrations using pulsed DBD plasma actuators," *Journal of Fluids & Structures*, Vol. 34, 2012, pp. 170-189.

40. Greenblatt, D., Schneider, T. and Schüle, C.Y., "Mechanism of flow separation control using Plasma Actuation," *Physics of Fluids*, Vol. 24, 077102, 2012. dx.doi.org/10.1063/1.4733399 (26 pages).

41. Goyta, S., Mueller-Vahl, H. and Greenblatt, D., "Tethered cube stabilization by means of leading-edge DBD plasma actuation," *Experiments in Fluids*, Vol. 54, No. 1, 2013, pp. 1-16. DOI 10.1007/s00348-012-1446-6.

42. van Hout, R., Katz, A., Greenblatt, D., "Acoustic control of vortex-induced vibrations of a tethered sphere," *AIAA Journal*, 2013, Vol. 51, No. 3, 2013, pp. 754-757.

43. van Hout, R., Katz, A., Greenblatt, D., "Time-resolved PIV measurements of vortex and shear layer dynamics in the near wake of a tethered sphere," *Physics of Fluids*, Vol. 25, 077102, 2013. dx.doi.org/10.1063/1.4812181 (19 pages).

44. Greenblatt, D., Ben-Harav, A. and Mueller-Vahl, H., "Dynamic Stall Control on a Vertical-Axis Wind Turbine Using Plasma Actuators," *AIAA Journal*, Vol. 52, No. 2, 2014, pp. 456-462, DOI: 10.2514/1.J052776.

45. Ben-Harav, A. and Greenblatt, D., "Feed-forward dynamic stall control on a vertical axis wind turbine," *Wind Energy* (in press). Published online: 27 Oct 2014. DOI: 10.1002/we.1814.

46. Greenblatt, D., Doron, G. and Treizer, A., "Eidelman Reciprocating-Motion Wind-Energy Generator Driven by Plasma Actuation," *International Journal of Flow Control*, Vol. 6, No. 2, 2014, pp. 105-124.

47. Mueller-Vahl, H., Strangfeld, C., Nayeri, C.N., Paschereit, C.O and Greenblatt, D., "Control of Thick Airfoil Deep Dynamic Stall Using Steady Blowing," *AIAA Journal*, Vol. 53, No. 2, 2015, pp. 277-295.

48. Mueller-Vahl, H., Paschereit, C.O and Greenblatt, D., "Mixing enhancement of an axisymmetric jet using flaplets with zero mass-flux excitation," *Experiments in Fluids*, Vol. 56:38, Issue 2, 2015, pp. 1-22. DOI 10.1007/s00348-014-1889-z.

49. Depuru Mohan, N.K., Greenblatt, D., Nayeri, C.N., Paschereit, C.O. and Panchapakesan, N.R., "Vortex-enhanced mixing through active and passive flow control," *Experiments in Fluids*, Vol. 56:51, Issue 3, 2015, pp. 1-16. DOI 10.1007/s00348-015-1916-8.

50. Greenblatt D. and Lautman, R., "Inboard/Outboard Plasma Actuation on a Vertical-Axis Wind Turbine" *Renewable Energy* (in press)

51. Strangfeld, C., Müller-Vahl, H.F., Greenblatt, D., Nayeri, C.N. and Paschereit, C.O., "Airfoil in a High Amplitude Oscillating Stream," *Journal of Fluid Mechanics*, (in press).

52. Greenblatt, D., "Unsteady low-speed wind tunnels," *AIAA Journal* (in press).

Review papers

53. Greenblatt, D. and Wygnanski, I., "The control of separation by periodic excitation," *Progress in Aerospace Sciences*, Volume 36, Issue 7, 2000, pp. 487-545.

54. Seifert, A., Greenblatt, D. and Wygnanski, I., "Active separation control: A review of Reynolds and Mach numbers effects," *Aerospace Science and Technology*, Vol. 8, 2004, pp. 569-582.

Book & Encyclopedia Chapters

1. Göksel, B., Greenblatt, D., Rechenberg, I. Kastantin, Y., Nayeri, C.N. and Paschereit, C.O., "Pulsed plasma actuators for active flow control at MAV Reynolds Numbers," *Notes on Numerical Fluid Mechanics and Multidisciplinary Design*, Vol. 95, pp. 42-55, 2007.

2. Greenblatt, D., Kastanin, Y., Singh, Y., Nayeri, C.N. Paschereit, C.O., "Active management of entrainment and streamwise vortices in an incompressible jet," *Notes on Numerical Fluid Mechanics and Multidisciplinary Design*, Vol. 95, pp. 281-292, 2007.

3. Greenblatt, D. and Wygnanski, I., "Chapter 2: Physical concepts underlying the application of modern flow control," in *Fundamentals and Applications of Modern Flow Control*, (eds.) R.D. Joslin and D. Miller, Progress in Astronautics and Aeronautics Series, 231, Published by AIAA, 2009, ISBN-10: 1-56347-983-4, ISBN-13: 978-1-56347-983-0, pp. 21-57.

4. Nayeri, C.N., Haff, J. Greenblatt, D., Loefdahl, L., Paschereit, C.O., "Drag reduction on a generic tractor-trailer using active flow control in combination with solid flaps," The Aerodynamics of Heavy Vehicles II: Trucks, Buses, and Trains, Vol. 41, 2009, pp. 179-191.

5. Greenblatt, D., Rumsey, C. and Wygnanski, I., "Active control of aerodynamic flows," in Encyclopedia of Aerospace Engineering, Edited by Richard Blockley and Wei Shyy, (2010) John Wiley & Sons, Ltd. ISBN: 978-0-470-75440-5.

6. Mueller-Vahl, H., Strangfeld, C., Nayeri, C.N., Paschereit, C.O. and Greenblatt, D., "Thick Airfoil Dynamic Stall," in "Wind Energy – Impact of Turbulence," (eds. M. Hölling, J. Peinke and S. Ivanell), Springer, pp. 35-40, 2013.

7. Greenblatt, D., Müller-Vahl, H., Lautman, R., Ben-Harav A. and Eshel, B., "DBD Plasma-Based Flow Control on a Vertical Axis Wind Turbine," Active Flow and Combustion Control 2014, edited by Rudibert King, 01/2015: pp. 71-86; Springer, ISBN: 978-3-319-11967-0.

Patents

1. Wygnanski, I., Greenblatt, D. and Seifert, A., "Airfoil with dynamic stall control by oscillatory forcing," US Patent No. 6,267,331, July 31, 2001.

2. Seifert, A., Greenblatt, D. and Wygnanski, I., "An aerial vehicle controlled and propelled by oscillatory momentum generators and method of flying a vehicle," US Patent No. 6,751,530. Israeli patent no. 165553.

3. Greenblatt, D., "Trailing Vortex Management via boundary layer separation control," filed on July 11, 2003, USPTO Pub. No. US 2005/0103944 A1.

4. Greenblatt, D., "Vortex control for rotor blade devices," US Patent No. 7,467,921, December 23, 2008.

5. Greenblatt, D., "Simultaneous multiple-location separation control," US Patent No. 7,537,182, May 26, 2009.

6. Greenblatt, D., "Aerodynamic Performance Enhancements using discharge plasma actuators," US Patent No. 8,708,651, April 29, 2014

7. Greenblatt, D., "Gurney fan and propeller performance enhancements using outsized Gurney flaps," US Patent No. 8,764,403, July 1, 2014.

8. Greenblatt, D, "Clean energy generation via controlled vortex shedding," International Patent Application No. PCT/IL2011/050011, 2011.

9. Greenblatt, D, Sasson, B. and Schulman, M., "Flow control on a vertical axis wind turbine (VAWT)," International Patent Application No. PCT/IL2011/000165.

CONFERENCES

Keynote Addresses

1. Greenblatt, D., Paschal, K., Schaeffler, N., Washburn, A., Harris, J. and Yao, C., "Case 3: Separation control over a wall-mounted hump," Langley Research Center Workshop on CFD Validation of Synthetic Jets and Turbulent Separation Control, Williamsburg, Vol.1, pp. 3.1.1-3.1.5, VA, March 29-31, 2004. (see cfdval2004.larc.nasa.gov/case3.html).

2. Greenblatt, D., "Flow Control on Wind Turbine Blades: From Conventional to Radical," 14th World Wind Energy Conference and Exhibition, 26-28 October, 2015. Jerusalem, Israel.

Invited Papers & Presentations

3. Greenblatt, D., Darabi, A., Nishri, B. and Wygnanski, I., "Separation control by periodic addition of momentum with particular emphasis on dynamic stall," *American Helicopter Society (AHS) Paper T3-4*, Gifu, Japan, April 21-23, 1998. *Invited AHS Paper. Presented by I. Wygnanski.*

4. Greenblatt, D. and Wygnanski, I., "Parameters affecting dynamic stall control by oscillatory excitation," AIAA Paper 99-3121, 17th AIAA Applied Aerodynamics Conference, Norfolk, VA, 28 June – 1 July, 1999.

5. Greenblatt, D., Darabi, A., Nishri, B. and Wygnanski, I., "Some factors affecting stall control with particular emphasis on dynamic stall," AIAA Paper 99-3504, 30th AIAA Fluid Dynamics Conference, Norfolk, VA, 28 June – 1 July, 1999.

6. Nagib, H., Kiedaisch, J., Greenblatt, D., Wygnanski, I. and Hassan, A., "Effective Flow Control for Rotorcraft Applications at Flight Mach Numbers," AIAA Paper 2001-2974, 31st AIAA Fluid Dynamics Conference & Exhibit, Anaheim, CA, June 2001. *Presented by H. Nagib.*

7. Nishri, B., Greenblatt, D., and Wygnanski, I. J. "The evolution of a boundary layer over a flat plate in the presence of a strong adverse pressure gradient and periodic excitation," Aeromems Brite-Euram: TAU Final Report, Manchester 2001. *Invited Brite-Euram Report. Presented by I. Wygnanski.*

8. Greenblatt, D., Paschal, K., Yao, C. and Harris, J., "Test case 11.1: Wall-mounted two-dimensional hump with oscillatory zero-mass-flux jet or suction through a slot," 11th ERCOFTAC/IAHR/Cost Workshop on Refined Turbulence Modelling, Chalmers University of Technology, Göteborg, Sweden, April 7-8, 2005. (see www.tfd.chalmers.se/~gujo/WS11_2005/). *Invited re-presentation for the ERCOFTAC CFD Validation Workshop.*

9. Greenblatt, D., "Management of Vortices Tailing Flapped Wings via Separation Control," AIAA Paper 2005-0061, 43rd AIAA Aerospace Sciences Meeting and Exhibit, Reno, Jan. 2005. *Voted by the AIAA Applied Aerodynamics Technical Committee as one*

of its best papers and invited for representation at the CEAS Aerodynamics Conference, 20-22 June 2005, Bremen, Germany.

10. Greenblatt, D., "The Team Approach to a CFD Validation Experiment," Flow Control Open Forum, 25th AIAA Applied Aerodynamics Conference, 25-28, Miami, FL, June 2007.

11. Nayeri, C.N., Greenblatt, D., Haff, J., Paschereit, C.O. and Loefdahl, L., Drag Reduction on a Generic Tractor-Trailer Using Active Flow Control in Combination with Segmented Base Flaps," The Aerodynamics of Heavy Vehicles II: Trucks, Buses and Trains, 26-31 August, 2007, Granlibakken Conference Center, Lake Tahoe, CA. (Presented by Nayeri.)

12. Greenblatt, D., Yao, C., Vey, S., Paschereit, C., Meyer, R., "Active Management of Flap-Edge Trailing Vortices," AIAA Paper 2008-4186, 4th AIAA Flow Control Conference, Seattle, Washington, June 23-26, 2008.

13. Romm, I and Greenblatt, D., "Subcritical Pipe Flow Transition Control Using Dielectric Barrier Discharge Plasma Actuators," International Conference on Active Flow Control II, May 26-28, 2010, Berlin, Germany.

14. Pechlivanoglou, G. and Greenblatt, D., "Research in dynamic stall and unsteady aerodynamics," Advances in Rotor Blades for Wind Turbines, 2nd International Conference, Park Hotel Bremen, Germany, 25-27 February 2013.

15. Greenblatt, D., "DBD Plasma-Based Flow Control on a Vertical Axis Wind Turbine," Active Flow and Combustion Control, 10-12 September, 2014, Berlin, Germany (see printed version above under Book & Encyclopedia Chapters).

16. Greenblatt, D., Müller-Vahl, H., Lautman, R., Ben-Harav A. and Eshel, B., "DBD Plasma-Based Flow Control on a Vertical Axis Wind Turbine," Conference on "Active Flow and Combustion Control 2014," Berlin, Germany, September 10-12, 2014.

17. Greenblatt, D., "Unsteady wind tunnel for rotor blade development & testing," 4th International Conference on Advances in Rotor Blades for Wind Turbines, 24-26 February 2015, Bremen, Germany.

18. Greenblatt, D., "Wind Turbine Flow Control Development is an Unsteady Wind Tunnel," International Scientific meeting: On Shear Flows and their Control, honoring Prof. Israel Wygnanski's 80th Birthday.

19. Greenblatt, D., "Targeted Experiments for CFD Validation of Separated and Unsteady Turbulent Flows," CFD Impact Conference, June 30th, 2015, Haifa, Israel.

20. Greenblatt, D. and Ol, M. "Large-Amplitude Surge-Pitch for Gust-Response Modeling," in ET-154 Incompressible Aerodynamics of Large Gust Encounters for Rigid Bodies, Prague, AVT-36th Panel Meeting, NATO Science and Technology Organization (STO).