

Dr. Mohamed Gad-el-Hak

Summary of Publications

- Books: 20 books.
- Journal Articles: 141 journal articles.
- Essays in Magazines and Newspapers: 52 essays.
- Book Chapters: 63 publications.
- Proceedings Articles: 73 publications.
- Refereed Meeting Articles and Abstracts: 150 articles.
- Reports: 120 reports.
- Book Reviews: 28 reviews.
- Patents: 2 granted; 7 disclosed.
- Invited Lectures: 313 lectures.

List of Publications

I. Books

1. Gad-el-Hak, M. (editor) (1989) *Advances in Fluid Mechanics Measurements, Lecture Notes in Engineering*, vol. 45, 606 pages, Springer-Verlag, New York, New York.
2. Gad-el-Hak, M. (editor) (1989) *Frontiers in Experimental Fluid Mechanics, Lecture Notes in Engineering*, vol. 46, 532 pages, Springer-Verlag, New York, New York.
3. Bonnet, J.-P., Gad-el-Hak, M., and Pollard, A. (editors) (1996) *Proceedings of the Workshop on Flow Control: Fundamentals and Practices*, 200 pages, Institut d'Etudes Scientifiques des Cargèse, Corsica, France.
4. Breuer, K.S., Bandyopadhyay, P.R., and Gad-el-Hak, M. (editors) (1996) *Application of Microfabrication to Fluid Mechanics*, DSC-Volume 59, 468 pages, ASME, New York, New York.
5. Gad-el-Hak, M., Pollard, A., and Bonnet, J.-P. (editors) (1998) *Flow Control: Fundamentals and Practices, Lecture Notes in Physics*, vol. m53, 540 pages, Springer-Verlag, Berlin.
6. Gad-el-Hak, M. (guest editor) (1998) *Flow Control: Fundamentals and Practices*, special issue of *Experimental Thermal and Fluid Science (ETFS)*, vol. 16, no. 1&2, 172 pages, Elsevier, New York, New York.
7. Gad-el-Hak, M. (2000) *Flow Control: Passive, Active, and Reactive Flow Management*, 448 pages, Cambridge University Press, London, United Kingdom. Reprinted in paperback 2006.
8. Gad-el-Hak, M. (editor) (2002) *The MEMS Handbook*, 1368 pages, CRC Press, Boca Raton, Florida. Second edition 2006.
9. Gad-el-Hak, M. (editor) (2004) *Proceedings of the International Conference on Transport Phenomena in Micro- and Nanodevices*, CD Publication, Engineering Conference International, Brooklyn, New York.

10. Gad-el-Hak, M. (guest editor) (2005) *Special Topics: Transport Phenomena in Micro- and Nanodevices*, special issue of *Physics of Fluids*, vol. 17, no. 10, 139 pages, American Institute of Physics, New York, New York.
11. Gad-el-Hak, M. (editor) (2006) *MEMS: Introduction and Fundamentals*, 448 pages, CRC Taylor & Francis, Boca Raton, Florida.
12. Gad-el-Hak, M. (editor) (2006) *MEMS: Design and Fabrication*, 664 pages, CRC Taylor & Francis, Boca Raton, Florida.
13. Gad-el-Hak, M. (editor) (2006) *MEMS: Applications*, 568 pages, CRC Taylor & Francis, Boca Raton, Florida.
14. Gad-el-Hak, M., and Tsai, H.M. (editors) (2006) *Transition and Turbulence Control*, 444 pages, World Scientific, Singapore.
15. Gad-el-Hak, M. (editor) (2006) *Proceedings of the U.S.–Egypt Workshop on Predictive Methodologies for Global Weather-Related Disasters*, CD Publication, Virginia Commonwealth University, Richmond, Virginia.
16. Gad-el-Hak, M. (editor) (2006) *Proceedings of the Second International Conference on Transport Phenomena in Micro- and Nanodevices*, CD Publication, Engineering Conference International, Brooklyn, New York.
17. Gad-el-Hak, M. (guest editor) (2007) *Transport Phenomena in Micro- and Nanodevices*, special issue of *Nanoscale and Microscale Thermophysical Engineering*, vol. 11, no. 1–2, 226 pages, Taylor & Francis, New York, New York.
18. Gad-el-Hak, M. (editor) (2008) *Large-Scale Disasters: Prediction, Control, and Mitigation*, 600 pages, Cambridge University Press, London, United Kingdom.
19. Kizilova, N., and Gad-el-Hak, M. (editors) (2012) *Contemporary Problems of Mathematics, Mechanics and Computing Sciences*, Kharkov University Press, Kharkov, Ukraine.
20. Castillo, L., Carbajal, G., and Gad-el-Hak, M. (editors) (2015) *TTU & WindInspire Summer Research Institute Proceedings: Renewable Energy & medicine*, Tex Tech University, Lubbock, Texas.

II. Journal Articles

1. Gad-el-Hak, M., and Corrsin, S. (1974) “Measurements of the Nearly Isotropic Turbulence Behind a Uniform Jet Grid,” *Journal of Fluid Mechanics* **62**, pp. 115–143.
2. Kutchai, H., Morton, J.B., and Gad-el-Hak, M. (1977) “Turbulent-Flow Properties of Dilute Solutions of Red Blood-Cells,” *Biophysical Journal* **17**, p. A260.
3. Gad-el-Hak, M., Morton, J.B., and Kutchai, H. (1977) “Turbulent-Flow of Red-Cells in Dilute Suspensions: Effect on Kinetics of O₂ Uptake,” *Biophysical Journal* **18**, pp. 289–300.
4. Howard, A.D., Morton, J.B., Gad-el-Hak, M., and Pierce, D.B. (1978) “Sand Transport Model of Barchan Dune Equilibrium,” *Sedimentology* **25**, pp. 307–338.
5. Gad-el-Hak, M., and Morton, J.B. (1979) “Experiments on the Diffusion of Smoke in Isotropic Turbulent Flow,” *AIAA Journal* **17**, pp. 558–562.
6. Gad-el-Hak, M., Blackwelder, R.F., and Riley, J.J. (1981) “On the Growth of Turbulent Regions in Laminar Boundary Layers,” *Journal of Fluid Mechanics* **110**, pp. 73–95.
7. Gad-el-Hak, M., Davis, S.H., McMurray, J.T., and Orszag, S.A. (1984) “On the Stability of the Decelerating Boundary Layer,” *Journal of Fluid Mechanics* **138**, pp. 297–323.

8. Lin, J.-T., and Gad-el-Hak, M. (1984) "Turbulence Characteristics in Wind-Waves," *Journal of Geophysical Research* **89**, no. C1, pp. 627–636.
9. Gad-el-Hak, M., Blackwelder, R.F., and Riley, J.J. (1984) "On the Interaction of Compliant Coatings with Boundary Layer Flows," *Journal of Fluid Mechanics* **140**, pp. 257–280.
10. Gad-el-Hak, M., and Blackwelder, R.F. (1985) "The Discrete Vortices from a Delta Wing," *AIAA Journal* **23**, pp. 961–962.
11. Gad-el-Hak, M., and Ho, C.-M. (1985) "The Pitching Delta Wing," *AIAA Journal* **23**, pp. 1660–1665.
12. Gad-el-Hak, M. (1986) "The Response of Elastic and Viscoelastic Surfaces to a Turbulent Boundary Layer," *Journal of Applied Mechanics* **53**, pp. 206–212.
13. Gad-el-Hak, M. (1986) "The Use of the Dye-Layer Technique for Unsteady Flow Visualization," *Journal of Fluids Engineering* **108**, pp. 34–38.
14. Gad-el-Hak, M. (1986) "Boundary Layer Interactions with Compliant Coatings: An Overview," feature article in *Applied Mechanics Reviews* **39**, pp. 511–524.
15. Gad-el-Hak, M., and Ho, C.-M. (1986) "Unsteady Vortical Flow Around Three-Dimensional Lifting Surfaces," *AIAA Journal* **24**, pp. 713–721.
16. Gad-el-Hak, M., and Ho, C.-M. (1986) "Unsteady Flow Around an Ogive-Cylinder," *Journal of Aircraft* **23**, pp. 520–528.
17. Gad-el-Hak, M., and Hussain, A.K.M.F. (1986) "Coherent Structures in a Turbulent Boundary Layer. Part 1: Generation of 'Artificial' Bursts," *Physics of Fluids* **29**, pp. 2124–2139.
18. Gad-el-Hak, M. (1987) "Compliant Coatings Research: A Guide to the Experimentalist," *Journal of Fluids and Structures* **1**, pp. 55–70.
19. Gad-el-Hak, M. (1987) "Unsteady Separation on Lifting Surfaces," feature article in *Applied Mechanics Reviews* **40**, pp. 441–453.
20. Gad-el-Hak, M. (1987) "The Water Towing Tank as an Experimental Facility: An Overview," *Experiments in Fluids* **5**, pp. 289–297.
21. Gad-el-Hak, M., and Blackwelder, R.F. (1987) "Control of the Discrete Vortices from a Delta Wing," *AIAA Journal* **25**, pp. 1042–1049.
22. Gad-el-Hak, M., and Blackwelder, R.F. (1987) "Simulation of Large-Eddy Structures in a Turbulent Boundary Layer," *AIAA Journal* **25**, pp. 1207–1215.
23. Riley, J.J., Gad-el-Hak, M., and Metcalfe, R.W. (1988) "Compliant Coatings," *Annual Review of Fluid Mechanics* **20**, pp. 393–420.
24. Gad-el-Hak, M. (1988) "Visualization Techniques for Unsteady Flows: An Overview," *Journal of Fluids Engineering* **110**, pp. 231–243.
25. Gad-el-Hak, M., and Blackwelder, R.F. (1989) "Selective Suction for Controlling Bursting Events in a Boundary Layer," *AIAA Journal* **27**, pp. 308–314.
26. Gad-el-Hak, M. (1989) "Flow Control," feature article in *Applied Mechanics Reviews* **42**, pp. 261–293.
27. Gad-el-Hak, M. (1990) "Large Gradients due to Wall Turbulence," in *Some Unanswered Questions in Fluid Mechanics*, eds. L.M. Trefethen and R.L. Panton, *Applied Mechanics Reviews* **43**, pp. 153–170.
28. Gad-el-Hak, M. (1990) "Control of Low-Speed Airfoil Aerodynamics," *AIAA Journal* **28**, pp. 1537–1552.

29. Xu, J.C., Sen, M., and Gad-el-Hak, M. (1990) "Low-Reynolds Number Flow Over a Rotatable Cylinder-Splitter Plate Body," *Physics of Fluids A* **2**, pp. 1925–1927.
30. Gad-el-Hak, M., and Bushnell, D.M. (1991) "Separation Control: Review," *Journal of Fluids Engineering* **113**, pp. 5–30.
31. Gad-el-Hak, M. (1992) "Splendor of Fluids in Motion," *Progress in Aerospace Sciences* **29**, pp. 81–123.
32. Xu, J.C., Sen, M., and Gad-el-Hak, M. (1993) "Dynamics of a Rotatable Cylinder with Splitter Plate in Uniform Flow," *Journal of Fluids and Structures* **7**, pp. 401–416.
33. Gad-el-Hak, M., and Bandyopadhyay, P.R. (1994) "Questions in Fluid Mechanics: Reynolds Number Effects in Wall-Bounded Flows," *Journal of Fluids Engineering* **116**, pp. 2–3.
34. Zaki, T.G., Sen, M., and Gad-el-Hak, M. (1994) "Numerical and Experimental Investigation of Flow Past a Freely Rotatable Square Cylinder," *Journal of Fluids and Structures* **8**, pp. 555–582.
35. Gad-el-Hak, M., and Bandyopadhyay, P.R. (1994) "Reynolds Number Effects in Wall-Bounded Flows," feature article in *Applied Mechanics Reviews* **47**, pp. 307–365.
36. Gad-el-Hak, M. (1994) "Interactive Control of Turbulent Boundary Layers: A Futuristic Overview," *AIAA Journal* **32**, pp. 1753–1765.
37. Gad-el-Hak, M., and Bandyopadhyay, P.R. (1995) "Field Versus Laboratory Turbulent Boundary Layers," *AIAA Journal* **33**, pp. 361–364.
38. Gad-el-Hak, M. (1995) "Questions in Fluid Mechanics: Stokes' Hypothesis for a Newtonian, Isotropic Fluid," *Journal of Fluids Engineering* **117**, pp. 3–5.
39. Gad-el-Hak, M., and Sen, M. (1996) "Fluid Mechanics in the Next Century," *Applied Mechanics Reviews* **49**, no. 3, pp. III–IV.
40. Bandyopadhyay, P.R., and Gad-el-Hak, M. (1996) "Rotating Gas-Liquid Flows in Finite Cylinders: Sensitivity of Standing Vortices to End Effects," *Experiments in Fluids* **21**, pp. 124–138.
41. Gad-el-Hak, M. (1996) "Modern Developments in Flow Control," *Applied Mechanics Reviews* **49**, pp. 365–379.
42. Sen, M., Wajerski, D., and Gad-el-Hak, M. (1996) "A Novel Pump for MEMS Applications," *Journal of Fluids Engineering* **118**, pp. 624–627.
43. Gad-el-Hak, M. (1996) "Compliant Coatings: A Decade of Progress," *Applied Mechanics Reviews* **49**, no. 10, part 2, pp. S147–S157.
44. Gad-el-Hak, M., and Leissa, A.W. (1997) "Introduction to Hans W. Liepmann's retrospective 'Boundary Layer Transition: The Early Days'," *Applied Mechanics Reviews* **50**, no. 2, pp. R1–R4.
45. Sharatchandra, M.C., Sen, M., and Gad-el-Hak, M. (1997) "Navier–Stokes Simulations of a Novel Viscous Pump," *Journal of Fluids Engineering* **119**, pp. 372–382.
46. Maureau, J., Sharatchandra, M.C., Sen, M., and Gad-el-Hak, M. (1997) "Flow and Load Characteristics of Microbearings with Slip," *Journal of Micromechanics and Microengineering* **7**, pp. 55–64.
47. Gad-el-Hak, M., and Leissa, A.W. (1997) "Introduction to George Batchelor's retrospective 'Research as a Life Style'," *Applied Mechanics Reviews* **50**, no. 8, pp. R11–R20.
48. Gad-el-Hak, M. (1997) "The Last Conundrum," *Applied Mechanics Reviews* **50**, no. 12, part 1, pp. 1–2.
49. Sharatchandra, M.C., Sen, M., and Gad-el-Hak, M. (1998) "New Approach to Constrained Shape Optimization Using Genetic Algorithms," *AIAA Journal* **36**, pp. 51–61.

50. Sharatchandra, M.C., Sen, M., and Gad-el-Hak, M. (1998) “Thermal Aspects of a Novel Viscous Pump,” *Journal of Heat Transfer* **120**, pp. 99–107.
51. Gad-el-Hak, M. (1998) “Introduction to the Issue,” *International Journal of Experimental Heat Transfer, Thermodynamics, and Fluid Mechanics* **16**, pp. 1–2.
52. Gad-el-Hak, M. (1998) “Compliant Coatings: The Simpler Alternative,” *International Journal of Experimental Heat Transfer, Thermodynamics, and Fluid Mechanics* **16**, pp. 141–156.
53. Pollard, A., Bonnet, J.-P., and Gad-el-Hak, M. (1998) “Flow Control: Current Status and Future Prospects,” *International Journal of Experimental Heat Transfer, Thermodynamics, and Fluid Mechanics* **16**, pp. 157–164.
54. DeCourtye, D., Sen, M., and Gad-el-Hak, M. (1998) “Analysis of Viscous Micropumps and Microturbines,” *International Journal of Computational Fluid Dynamics* **10**, pp. 13–25.
55. Gad-el-Hak, M. (1998) “Fluid Mechanics from the Beginning to the Third Millennium,” *International Journal of Engineering Education* **14**, pp. 177–185.
56. Löfdahl, L., and Gad-el-Hak, M. (1999) “MEMS Applications in Turbulence and Flow Control,” *Progress in Aerospace Sciences* **35**, pp. 101–203.
57. Gad-el-Hak, M. (1999) “The Fluid Mechanics of Microdevices—The Freeman Scholar Lecture,” *Journal of Fluids Engineering* **121**, pp. 5–33.
58. Löfdahl, L., and Gad-el-Hak, M. (1999) “MEMS-Based Pressure and Shear Stress Sensors,” *Measurement Science and Technology* **10**, pp. 665–686.
59. Gad-el-Hak, M. (2001) “Flow Control: The Future,” *Journal of Aircraft* **38**, pp. 402–418.
60. Gad-el-Hak, M. (2001) “Micro-Air-Vehicles: Can They be Controlled Better?,” *Journal of Aircraft* **38**, pp. 419–429.
61. Gad-el-Hak, M. (2001) “Physique des Écoulements dans les MEMS,” *Mécanique et Industries* **2**, pp. 313–341.
62. Gad-el-Hak, M. (2002) “Compliant Coatings for Drag Reduction,” *Progress in Aerospace Sciences* **38**, pp. 77–99.
63. Stein, C.F., Johansson, P., Bergh, J., Löfdahl, L., Sen, M., and Gad-el-Hak, M. (2002) “An Analytical Asymptotic Solution to a Conjugate Heat Transfer Problem,” *International Journal of Heat and Mass Transfer* **45**, pp. 2485–2500.
64. Hamadiche, M., and Gad-el-Hak, M. (2002) “Temporal Stability of Flow Through Viscoelastic Tubes,” *Journal of Fluids and Structures* **16**, pp. 331–359.
65. Buschmann, M.H., and Gad-el-Hak, M. (2003) “Generalized Logarithmic Law and Its Consequences,” *AIAA Journal* **41**, pp. 40–48.
66. Buschmann, M.H., and Gad-el-Hak, M. (2003) “Debate Concerning the Mean-Velocity Profile of a Turbulent Boundary Layer,” *AIAA Journal* **41**, pp. 565–572.
67. Gad-el-Hak, M. (2003) “Comments on ‘Critical View on New Results in Micro-Fluid Mechanics’,” *International Journal of Heat and Mass Transfer* **46**, pp. 3941–3945.
68. Hamadiche, M., and Gad-el-Hak, M. (2004) “Spatiotemporal Stability of Flow Through Collapsible, Viscoelastic Tubes,” *AIAA Journal* **42**, pp. 772–786.
69. Gad-el-Hak, M. (2004) “Transport Phenomena in Microdevices,” *Zeitschrift für Angewandte Mathematik und Mechanik (ZAMM)* **84**, pp. 494–498.

70. Buschmann, M.H., and Gad-el-Hak, M. (2004) "Comment on 'Evaluating the Law of the Wall in Two-Dimensional Fully-Developed Turbulent Channel Flows'," *Physics of Fluids* **16**, pp. 3507–3508.
71. Speich, J.E., McLeskey, J.T., Jr., Richardson, J.S., and Gad-el-Hak, M. (2004) "The Experiential Engineering Library," *International Journal of Engineering Education* **20**, pp. 1022–1033.
72. Buschmann, M.H., and Gad-el-Hak, M. (2005) "New Mixing-Length Approach for the Mean Velocity Profile of Turbulent Boundary Layers," *Journal of Fluids Engineering* **127**, pp. 393–396.
73. Gad-el-Hak, M. (2005) "Preface: Transport Phenomena in Micro- and Nanodevices," *Physics of Fluids* **17**, p. 100501.
74. Gad-el-Hak, M. (2005) "Liquids: The Holy Grail of Microfluidic Modeling," *Physics of Fluids* **17**, pp. 100612.1–100612.13.
75. Gad-el-Hak, M. (2005) "Differences Between Liquid and Gas Transport at the Microscale," *Bulletin of the Polish Academy of Sciences* **53**, pp. 301–316.
76. McLeskey, J.T., Jr., Speich, J.E., Richardson, J.S., and Gad-el-Hak, M. (2006) "Evaluation of an Experiential Engineering Library," *International Journal of Engineering Education* . **22**, pp. 247–256.
77. Gad-el-Hak, M. (2006) "Gas and Liquid Transport at the Microscale," *Heat Transfer Engineering* **27**, pp. 13–29.
78. Indinger, T., Buschmann, M.H., and Gad-el-Hak, M. (2006) "Mean-Velocity Profile of Turbulent Boundary Layers Approaching Separation," *AIAA Journal* **44**, pp. 2465–2474.
79. Buschmann, M.H., and Gad-el-Hak, M. (2006) "Structure of the Canonical Turbulent Wall-Bounded Flow," *AIAA Journal* **44**, pp. 2500–2503.
80. Xi, J., Si, X., Longest, P.W., and Gad-el-Hak, M. (2007) "Curvature Law of the Wall for Swirling Axial Flows in Rotating Machinery," *Journal of Fluids Engineering* **129**, pp. 169–178.
81. Buschmann, M.H., and Gad-el-Hak, M. (2007) "Scaling of the Mean-Velocity Profiles of the Canonical Turbulent Wall-Bounded Flow," *Progress in Aerospace Sciences* **42**, pp. 419–467.
82. Buschmann, M.H., and Gad-el-Hak, M. (2007) "Turbulent Boundary Layers: Reality and Myth," *International Journal of Computing Science and Mathematics* **1**, pp. 159–176.
83. Oualli, H., Hanchi, S., Bouabdallah, A., Asković, R., and Gad-el-Hak, M. (2008) "Interaction Between the Near Wake and the Cross-Section Variation of a Circular Cylinder in Uniform Flow," *Experiments in Fluids* **44**, pp. 807–818.
84. Buschmann, M.H., and Gad-el-Hak, M. (2009) "Evidence of Non-Logarithmic Behavior of Turbulent Channel and Pipe Flow," *AIAA Journal* **47**, pp. 535–541.
85. Gad-el-Hak, M. (2009) "The Art and Science of Large-Scale Disasters," *Bulletin of the Polish Academy of Sciences* **57**, pp. 3–34.
86. Hamadiche, M., Kizilova, N., and Gad-el-Hak, M. (2009) "Suppression of Absolute Instabilities in the Flow Inside a Compliant Tube," *Communications in Numerical Methods in Engineering* **25**, pp. 505–531.
87. Buschmann, M.H., Indinger, T., and Gad-el-Hak, M. (2009) "Near-Wall Behavior of Turbulent Wall-Bounded Flows," *International Journal of Heat and Fluid Flow* **30**, pp. 993–1006.
88. Gad-el-Hak, M. (2009) "Flow Control and the Energy Crisis," *International Journal of Flow Control* **1**, pp. 175–178.

89. Kizilova, N., Hamadiche, M., and Gad-el-Hak, M. (2009) “Flow in Compliant Tubes: Control and Stabilization by Multilayered Coatings,” *International Journal of Flow Control* **1**, pp. 199–211.
90. Gad-el-Hak, M. (2009) “DNS of Turbulent Boundary Layers: the Breakthrough That Opened a Can of Worms,” *CFD Letters* **1**, no. 2, pp. ii–iv.
91. Bhadauria, R., Pidaparti, R.M., and Gad-el-Hak, M. (2009) “Optimization of a Peristaltic Micropump with Multiple Moving Actuators,” *Journal of Microelectronics and Electronic Packaging* **6**, number 4, pp. 189–197.
92. Gad-el-Hak, M. (2010) “Facets and Scope of Large-Scale Disasters,” *Natural Hazards Review* **11**, issue 1, pp. 1–6.
93. Speich, J.E., McLeskey, J.T., Jr., and Gad-el-Hak, M. (2010) “Curriculum Development for a Nuclear Track in Mechanical Engineering,” *International Journal of Engineering Education* **26**, pp. 716–726.
94. Buschmann, M.H., and Gad-el-Hak, M. (2010) “Kolmogorov Scaling of Turbulent Flow in the Vicinity of the Wall,” *Physica D: Nonlinear Phenomena* **239**, pp. 1288–1295.
95. Buschmann, M.H., and Gad-el-Hak, M. (2010) “Normal and Cross-Flow Reynolds Stresses: Differences Between Confined and Semi-Confined Flows,” *Experiments in Fluids* **49**, pp. 213–223.
96. Bhadauria, R., Pidaparti, R.M., and Gad-el-Hak, M. (2010) “Solution of Two-Dimensional Viscous Flow Driven by Motion of Flexible Walls,” *CFD Letters* **2**, pp. 1–12.
97. Trimble, S.W., Grody, W.W., McKelvey, B., and Gad-el-Hak, M. (2010) “The Glut of Academic Publishing: A Call for a New Culture,” *Academic Questions* **23**, pp. 276–286.
98. Trimble, S.W., McKelvey, B., Grody, W.W., Gad-el-Hak, M., Siegel, D.I., Baveye, P.C., and Bauerlein, M. (2010) “Correspondence: Reward Quality Not Quantity,” *Nature* **467**, no. 7317, 14 October 2010, p. 789.
99. Samaha, M.A., Vahedi Tafreshi, H., and Gad-el-Hak, M. (2011) “Modeling Drag Reduction and Meniscus Stability of Superhydrophobic Surfaces Comprised of Random Roughness,” *Physics of Fluids* **23**, pp. 012001.1–012001.8.
100. Gad-el-Hak, M., and Buschmann, M.H. (2011) “Turbulent Boundary Layers: Is the Wall Falling or Merely Wobbling?” *Acta Mechanica* **218**, pp. 309–318.
101. Samaha, M.A., Ochanda, F.O., Vahedi Tafreshi, H., Tepper, G.C., and Gad-el-Hak, M. (2011) “In Situ, Non-invasive Characterization of Superhydrophobic Coatings,” *Review of Scientific Instruments* **82**, pp. 045109.1–045109.7.
102. Gad-el-Hak, M. (2011) “Large-Scale Disasters: Mechanistic Framework for Prediction, Control and Mitigation,” *Journal of Critical Incident Analysis* **1**, pp. 105–160.
103. Emami, B., Vahedi Tafreshi, H., Gad-el-Hak, M., and Tepper, G.C. (2011) “Predicting Shape and Stability of Air–Water Interface on Superhydrophobic Surfaces With Randomly Distributed, Dissimilar Posts,” *Applied Physics Letters* **98**, pp. 203106.1–203106.3.
104. Emami, B., Bucher, T.M., Vahedi Tafreshi, H., Pestov, D., Gad-el-Hak, M., and Tepper, G.C. (2011) “Simulation of Meniscus Stability in Superhydrophobic Granular Surfaces Under Hydrostatic Pressures,” *Colloids and Surfaces A: Physicochemical and Engineering Aspects* **385**, pp. 95–103.
105. Kizilova, N., Hamadiche, M., and Gad-el-Hak, M. (2011) “Flow Stabilization in Compliant Ducts: From Nature-Made to Human-Made,” *International Journal of Numerical Methods and Applications* **6**, pp. 1–86.

106. Ochanda, F.O., Samaha, M.A., Vahedi Tafreshi, H., Tepper, G.C., and Gad-el-Hak, M. (2012) "Fabrication of Superhydrophobic Fiber Coatings by DC-Biased AC-Electrospinning," *Journal of Applied Polymer Science* **123**, pp. 1112–1119.
107. Emami, B., Vahedi Tafreshi, H., Gad-el-Hak, M., and Tepper, G.C. (2012) "Predicting Shape and Stability of Air–Water Interface on Superhydrophobic Surfaces Comprised of Pores With Arbitrary Shapes and Depth," *Applied Physics Letters* **100**, pp. 013104.1–013104.4.
108. Samaha, M.A., Vahedi Tafreshi, H., and Gad-el-Hak, M. (2012) "Superhydrophobic Surfaces: From the Lotus Leaf to the Submarine," invited review, *Comptes Rendus de l'Académie des Sciences: Mécanique* **340**, pp. 18–34.
109. Kizilova, N., Hamadiche, M., and Gad-el-Hak, M. (2012) "Mathematical Models of Biofluid Flows in Compliant Ducts," *Archives of Mechanics* **64**, pp. 1–30.
110. Bucher, T.M., Emami, B., Vahedi Tafreshi, H., Gad-el-Hak, M., and Tepper, G.C. (2012) "Modeling Resistance of Nanofibrous Superhydrophobic Coatings to Hydrostatic Pressures: the Role of Microstructure," *Physics of Fluids* **42**, pp. 022109.1–022109.22.
111. Ochanda, F.O., Samaha, M.A., Vahedi Tafreshi, H., Tepper, G.C., and Gad-el-Hak, M. (2012) "Salinity Effects on the Degree of Superhydrophobicity and Longevity for Superhydrophobic Fibrous Coatings," *Journal of Applied Polymer Science* **124**, pp. 5021–5026.
112. Samaha, M.A., Vahedi Tafreshi, H., and Gad-el-Hak, M. (2012) "Effects of Hydrostatic Pressure on the Drag Reduction of Submerged Aerogel-Particle Coatings," *Colloids and Surfaces A: Physicochemical and Engineering Aspects* **399**, pp. 62–70.
113. Emami, B., Vahedi Tafreshi, H., Gad-el-Hak, M., and Tepper, G.C. (2012) "Effect of Fiber Orientation on Shape and Stability of Air–Water Interface on Submerged Superhydrophobic Electrospun Thin Coatings," *Journal of Applied Physics* **111**, pp. 064325.1–064325.6.
114. Keirsbulck, L., Fourrié, G., Labraga, L., and Gad-el-Hak, M. (2012) "Scaling of Statistics in Wall-Bounded Turbulent Flows," *Comptes Rendus de l'Académie des Sciences: Mécanique* **340**, pp. 420–433.
115. Samaha, M.A., Vahedi Tafreshi, H., and Gad-el-Hak, M. (2012) "Influence of Flow on Longevity of Superhydrophobic Coatings," *Langmuir* **28**, pp. 9759–9766.
116. Keirsbulck, L., Labraga, L., and Gad-el-Hak, M. (2012) "Statistical Properties of Wall-Shear-Stress Fluctuations in Turbulent Channel Flows," *International Journal of Heat and Fluid Flow* **37**, pp. 1–8.
117. Samaha, M.A., Vahedi Tafreshi, H., and Gad-el-Hak, M. (2012) "Sustainability of Superhydrophobicity Under Pressure," *Physics of Fluids* **24**, pp. 112103.1–112103.9.
118. Samaha, M.A., Vahedi Tafreshi, H., and Gad-el-Hak, M. (2013) "Novel Method to Characterize Superhydrophobic Coatings," *Journal of Colloid and Interface Science* **395**, pp. 315–321.
119. Emami, B., Hemeda, A.A., Amrei, M.M., Luzar, A., Gad-el-Hak, M., and Vahedi Tafreshi, H. (2013) "Predicting Longevity of Submerged Superhydrophobic Surfaces With Parallel Grooves," *Physics of Fluids* **25**, pp. 062108.1–062108.17.
120. Gad-el-Hak, M. (2013) "Comment on 'Experimental Study of Skin Friction Drag Reduction on Superhydrophobic Flat Plates in High Reynolds Number Boundary Layer Flow'," *Physics of Fluids* **25**, pp. 079101.1.1–079101.3.
121. Barth, C.A., Samaha, M.A., Vahedi Tafreshi, H., and Gad-el-Hak, M. (2013) "Convective Mass Transfer From Submerged Superhydrophobic Surfaces," *International Journal of Flow Control* **5**, pp. 79–88.
122. Barth, C.A., Samaha, M.A., Vahedi Tafreshi, H., and Gad-el-Hak, M. (2013) "Convective Mass Transfer From Submerged Superhydrophobic Surfaces: Turbulent Flow," *International Journal of Flow Control* **5**, pp. 143–151.

123. Samaha, M.A., and Gad-el-Hak, M. (2014) “Polymeric Slippery Coatings: Nature and Applications,” *Polymers* **6**, pp. 1266–1311.
124. Hemeda, A.A., Gad-el-Hak, M., and Vahedi Tafreshi, H. (2014) “Effects of Hierarchical Features on Longevity of Submerged Superhydrophobic Surfaces With Parallel Grooves,” *Physics of Fluids* **26**, pp. 082103.1–082103.18.
125. Gad-el-Hak, M. (2014) “Monologues of Learning,” *Academic Questions* **27**, pp. 310–312.
126. Gad-el-Hak, M. (2015) “Bring Back the Groves of Academe,” inaugural issue of *Engineering Education Letters* **2015**(1), pp. 4.1–4.5.
127. Gad-el-Hak, M. (2015) “To MOOC, or Not to MOOC, That is the Question,” *Engineering Education Letters* **2015**(2), pp. 5.1–5.4.
128. Zhang, C., Zhu, Y., Chen, X., Yaun, H., Wu, J., Chen, S., Lee, C., and Gad-el-Hak, M. (2015) “Transition in Hypersonic Boundary Layers,” *AIP Advances* **5**, pp. 107137.1–107137.6.
129. Gad-el-Hak, M. (2016) “Nine Decades of Fluid Mechanics,” *Journal of Fluids Engineering* **138**, pp. 100803.1–100803.10.
130. Oualli, H., Mekadem, M., Bouabdallah, A., and Gad-el-Hak, M. (2016) “Enhanced Turbulence in the Taylor–Couette Flow System,” *Procedia Engineering* **157**, pp. 443–450.
131. Zhu, Y., Zhang, C., Chen, X., Yaun, H., Wu, J., Chen, S., Lee, C., and Gad-el-Hak, M. (2016) “Transition in Hypersonic Boundary Layers: Role of Dilatational Waves,” *AIAA Journal* **54**, pp. 3039–3049.
132. Gad-el-Hak, M. (2017) “In Defense of Science: What Would John Do?” *Physics of Fluids* **29**, pp. 020602.1–020602.10.
133. Zhu, Y., Chen, X., Wu, J., Chen, S., Lee, C., and Gad-el-Hak, M. (2018) “Aerodynamic Heating in Hypersonic Boundary Layers” *Physics of Fluids* **30**, pp. 011701.1–011701.4.
134. Ullah, R., Khraisheh, M., Esteves, R.J., McLeskey, J.T., AlGhouti, M., Gad-el-Hak, M., and Vahedi Tafreshi, H. (2018) “Energy Efficiency of Direct Contact Membrane Distillation,” *Desalination* **433**, pp. 56–67.
135. Zhu, Y., Lee, C., Chen, X., Wu, J., Chen, S., and Gad-el-Hak, M. (2018) “Newly Identified Principle for Aerodynamic Heating in Hypersonic Flows,” *Journal of Fluid Mechanics* **855**, pp. 152–180.
136. Hemeda, A.A., Esteves, R.J.A., McLeskey, J.T., Gad-el-Hak, M., Khraisheh, M., and Vahedi Tafreshi, H. (2018) “Molecular Dynamic Simulations of Fibrous Distillation Membranes,” *International Communications in Heat and Mass Transfer* **98**, pp. 304–309.
137. Gad-el-Hak, M. (2019) “Coherent Structures and Flow Control: Genesis and Prospect,” *Bulletin of the Polish Academy of Sciences* **67**, pp. 411–444.
138. Gad-el-Hak, M. (2019) “Academic Malaise: Bring Back the Groves of Academe,” *Academic Questions* **32**, pp. 384–391.
139. Abdelrazeq, H., Khraisheh, M., Al Momani, F., McLeskey, J.T., Jr., Hassan, M.K., Gad-el-Hak, M., and Vahedi Tafreshi, H. (2020) “Performance of Electrospun Polystyrene Membranes in Synthetic Produced Industrial Water Using Direct-Contact Membrane Distillation,” *Desalination* **493**, pp. 114663.1–114663.9.
140. Esteves, R.J.A., Gornick, V., Alqurwani, D.S., Koenig-Lovejoy, J., Abdelrazeq, H., Khraisheh, M., Forzano, A.V., Gad-el-Hak, M., Vahedi Tafreshi, H., and McLeskey, J.T., Jr. (2020) “Activated Carbon-Doped Polystyrene Fibers for Direct Contact Membrane Desalination,” *Emergent Materials* **3**, pp. 807–814.
141. Samaha, M.A., and Gad-el-Hak, M. (2021) “Slippery Surfaces: a Decade of Progress,” *Physics of Fluids* **33**, pp. 071301.1–071301.35.

III. Essays in Magazines and Newspapers

1. Bandyopadhyay, P.R., and Gad-el-Hak, M. (1996) “Rotating Gas-Liquid Flows in Finite Cylinders: Sensitivity of Standing Vortices to End Effects,” *Naval Underwater Warfare Center: Technical Digest* **2**, August 1996, pp. 82–100.
2. Gad-el-Hak, M. (2002) “Flow Physics in Microdevices,” *Mechanics* **31**, no. 9/10, pp. XV–XXIX.
3. Gad-el-Hak, M. (2004) “Publish or Perish—An Ailing Enterprise?,” *Physics Today* **57**, March 2004, pp. 61–62.
4. Gad-el-Hak, M. (2004) “Publish or Perish—An Ailing Enterprise?,” reprinted in *Mechanics* **33**, no. 3/4, pp. 14–16.
5. Gad-el-Hak, M. (2004) “Publish or Perish—An Ailing Enterprise?,” translated into Japanese in *Parity* **19**, no. 9, pp. 48–51.
6. Gad-el-Hak, M. (2004) “Publicar o perecer—¿una empresa enfermiza?,” *UTecNoticias* **18**, September, Universidad Tecnológica Nacional, Buenos Aires, Argentina, <http://www.frbb.utn.edu.ar/utec/18/n07.html>.
7. Gad-el-Hak, M. (2005) “Publish or Perish—An Ailing Enterprise?,” translated into the Czech language in *Pokroky matematiky, fyziky a astronomie* **50**, no. 4, pp. 321–325.
8. Gad-el-Hak, M. (2006) “Akışkanlar: Mikro-Akışkanlar Modellemesinin Kutsal Kâsesi,” in Turkish, translated from “Liquids: The Holy Grail of Microfluidic Modeling,” *Mühendis ve Makina (Engineer and Machinery)* **47**, no. 556, pp. 51–96.
9. Gad-el-Hak, M. (2007) “Very, Very Small Is Beautiful,” *The Free Lance-Star*, Fredericksburg, Virginia, 16 December 2007, pp. D1–D3.
10. Gad-el-Hak, M. (2008) “Engineering vs. Disasters: Can Catastrophic Events be Tamed?,” *Mechanical Engineering* **130**, August 2008, pp. 39–41.
11. Gad-el-Hak, M. (2008) “Large-Scale Disasters as Dynamical Systems,” *Mechanical Engineering*, web exclusive, August 2008.
12. Gad-el-Hak, M. (2008) “Energy: It’s Time for Serious Talk,” *The Free Lance-Star*, Fredericksburg, Virginia, 17 August 2008, pp. D1–D3.
13. Gad-el-Hak, M. (2010) “Where Is Global Warming When We Need It?” *The Free Lance-Star*, Fredericksburg, Virginia, 21 March 2010, pp. D1–D3.
14. Gad-el-Hak, M. (2010) “Evidence for Climate Change Is Irrefutable and We Need to Address It,” *The Sacramento Bee*, Sacramento, California, 4 April 2010.
15. Gad-el-Hak, M. (2010) “Evidence for Climate Change Is Irrefutable and We Need to Address It,” *The Modesto Bee*, Modesto, California, 4 April 2010.
16. Gad-el-Hak, M. (2010) “Evidence for Climate Change Is Irrefutable and We Need to Address It,” *Merced Sun-Star*, Merced, California, 4 April 2010, <http://www.mercedsunstar.com/news/state/article3250474.html>.
17. Gad-el-Hak, M. (2010) “Inconvenient, Anthropogenic and True,” *The Janesville Gazette*, Janesville, Wisconsin, 8 April 2010.
18. Bauerlein, M., Gad-el-Hak, M., Grody, W., McKelvey, B., and Trimble, S.W. (2010) “We Must Stop the Avalanche of Low-Quality Research,” *The Chronicle of Higher Education* **LVI**, issue 38, back page Point of View, p. 80, 10 June 2010. (Chosen in 2011 by the British Science Council to be part of a standardized English examination.)

19. Gad-el-Hak, M. (2011) “When Peer Review Falters,” *The New York Times*, Opinion Pages, Room for Debates, 7 January 2011.
20. Bauerlein, M., Gad-el-Hak, M., Grody, W., McKelvey, B., and Trimble, S.W. (2011) “We Must Stop the Avalanche of Low-Quality Research,” translated into Chinese in *Teahouse for Sociologists*, issue 39, pp. 73–76, April 2011.
21. Gad-el-Hak, M. (2012) “Publish or Perish—An Ailing Enterprise?,” translated into Spanish in *Ingenierias*.
22. Gad-el-Hak, M. (2013) “STEM: Salmon Fishing in the US,” *The Free Lance-Star*, Fredericksburg, Virginia, 30 June 2013, pp. D1–D3, <http://fredericksburg.com/News/FLS/2013/062013/06302013/779367>.
23. Gad-el-Hak, M. (2013) “English, STEM, and Salmon Fishing in the Yemen,” *Physics Today*, 16 July 2013, http://www.physicstoday.org/daily_edition/points_of_view/english_stem_and_em_salmon_fishing_in_the_yemen_em.
24. Gad-el-Hak, M. (2013) “STEM, English and Salmon Fishing in the Yemen,” *The Richmond Times-Dispatch*, Richmond, Virginia, 17 July 2013, p. A11, http://www.timesdispatch.com/opinion/their-opinion/columnists-blogs/guest-columnists/stem-english-and-salmon-fishing-in-the-yemen/article_7c06946a-f037-5f88-a141-dac5529f1ca5.html.
25. Gad-el-Hak, M. (2013) “Opinion: English, STEM, and Salmon Fishing in the Yemen,” *VCU’s Across the Spectrum*, 29 July 2013, <https://www.spectrum.vcu.edu/insight/opinion-english-stem-and-salmon-fishing-in-the-yemen/#.UffM01N1EvZ>.
26. Gad-el-Hak, M. (2013) “English, STEM, and Salmon Fishing in the Yemen,” *NPR’s Science Matters*, 31 July 2013, <http://ideastations.org/articles/english-stem-and-salmon-fishing-in-yemen-2013-07-31>.
27. Gad-el-Hak, M. (2013) “English, STEM, and Salmon Fishing in the Yemen,” *Mechanical Engineering*, October 2013, pp. 8–9, <http://www.memagazinedigital.org/memagazine/201310#pg10>.
28. Gad-el-Hak, M. (2013) “Educating Rita in the Time of MOOC,” *VCU’s Across the Spectrum*, 18 November 2013, <https://www.spectrum.vcu.edu/insight/educating-rita-in-the-time-of-mooc/#.Uqi5KI2FfgQ>.
29. Gad-el-Hak, M. (2013) “Paying It Forward: Greatness has a Cost,” *The Free Lance-Star*, 24 November 2013, pp. D1–D3, <http://www.freelancestar.com/2013-12-08/articles/24233/commentary-will-moocs-provide>.
30. Gad-el-Hak, M. (2013) “Educating Rita, in the Time of MOOC,” *International Journal of Engineering Education*, December 2013, <http://www.ijee.ie/educatingrita.pdf>.
31. Gad-el-Hak, M. (2013) “Like It or Not, U.S. Government Must Finance Scientific Research,” *The Modesto Bee*, 4 December 2013.
32. Gad-el-Hak, M. (2013) “Like It or Not, U.S. Government Must Finance Scientific Research,” *Merced Sun-Star*, 4 December 2013.
33. Gad-el-Hak, M. (2013) “Like It or Not, U.S. Government Must Finance Scientific Research,” *Anchorage Daily News*, 4 December 2013.
34. Gad-el-Hak, M. (2013) “Like It or Not, U.S. Government Must Finance Scientific Research,” *McClatchy DC*, 4 December 2013.
35. Gad-el-Hak, M. (2013) “Like It or Not, U.S. Government Must Finance Scientific Research,” *The Fresno Bee*, 4 December 2013, <http://www.fresnobee.com/2013/12/04/3647003/like-it-or-not-us-government-must-finance-scientific-research/>.

36. Gad-el-Hak, M. (2013) "The Goal of Research and Development Is to Produce New or Improved Products," *Wilmington Star-News*, 7 December 2013.
37. Gad-el-Hak, M. (2013) "U.S. Government Must Step Up and Finance Scientific Research," *The Daily Gazette*, 8 December 2013, pp. D3–D4, <http://www.dailygazette.net/standard/ShowStoryTemplate.asp?Path=SCH/2013/12/08&ID=Ar03101&Section=Opinion>.
38. Gad-el-Hak, M. (2013) "Will MOOCs Provide an Advanced Education?," *The Free Lance-Star*, 8 December 2013, p. D4, <http://www.freelancestar.com/2013-12-08/articles/24233/commentary-will-moocs-prov>
39. Gad-el-Hak, M. (2013) "Long-Term, 'Curiosity' Research Pays Off," *The Richmond Times-Dispatch*, 11 December 2013, p. A11, http://www.timesdispatch.com/opinion/their-opinion/columnists-blogs/guest-columnists/gad-el-hak-long-term-curiosity-research-pays-off/article_0f07b713-259a-53c1-8eeb.html.
40. Gad-el-Hak, M. (2013) "Long-Term, 'Curiosity' Research Pays Off," *World News*, 11 December 2013, http://article.wn.com/view/2013/12/11/GadelHak_Longterm_curiosity_research_pays_off/.
41. Gad-el-Hak, M. (2013) "Like It or Not, U.S. Government Must Finance Scientific Research," *The Morning Call*, 14 December 2013, <http://www.mcall.com/topic/sns-mct-bc-sci-research-commentary-20131204,0,1418910.story>.
42. Gad-el-Hak, M. (2013) "Long-Term, 'Curiosity' Research Pays Off," *VCU's Across the Spectrum*, 20 December 2013, <https://www.spectrum.vcu.edu/insight/long-term-curiosity-research-pays-off/#Ut08UfYo7u4>.
43. Gad-el-Hak, M. (2014) "Educating Rita in the Age of MOOC," *Physics Today*, 17 January 2014, <http://scitation.aip.org/content/aip/magazine/physicstoday/news/10.1063/PT.5.2008>.
44. Gad-el-Hak, M. (2014) "Educating Rita in the Time of MOOC," *Mechanical Engineering*, February 2014, p. 8, http://www.memagazinedigital.org/memagazine/february_2014#pg10.
45. Gad-el-Hak, M. (2014) "The Three Faces of Engineering," *NPR's Science Matters*, 20 February 2014, <http://ideastations.org/science-matters/special-report/three-faces-engineering>.
46. Gad-el-Hak, M. (2014) "The Three Faces of Engineering," *VCU's Across the Spectrum*, 21 February 2014, <https://www.spectrum.vcu.edu/insight/the-three-faces-of-engineering/#.UwjAgF6pqLA>.
47. Gad-el-Hak, M. (2014) "The Three Faces of Engineering," *Mechanical Engineering*, May 2014, p. 16, http://www.memagazinedigital.org/memagazine/may_2014#pg18.
48. Gad-el-Hak, M. (2014) "In Praise of Old Ways," *ASEE's Prism* **23**, no. 8, p. 68, <http://www.asee-prism.org/last-word-3/>.
49. Gad-el-Hak, M. (2014) "Save the Tiger: The R in R&D," *Physics Today*, 18 June 2014, <http://scitation.aip.org/content/aip/magazine/physicstoday/news/10.1063/PT.5.2014>.
50. Gad-el-Hak, M. (2014) "In U.S. Universities, Faculty Takes a Back Seat," *The Free Lance-Star*, Fredericksburg, Virginia, 28 October 2014, p. A7, <http://www.freelancestar.com/2014-10-28/articles/48392/commentary-in-us-universities-faculty-takes-a-back-seat/>.
51. Gad-el-Hak, M. (2015) "Save the 'R' in R&D," *Mechanical Engineering*, January 2015, p. 8, http://www.memagazinedigital.org/memagazine/january_2015#pg10.
52. Gad-el-Hak, M. (2015) "To MOOC, or Not to MOOC, That is the Question," *Mechanical Engineering*, September 2015, pp. 46–47.