

Dr. Francis Avilés
PUBLICATION LIST

1. “Dynamical Thermal Model for Thin Metallic Film-Substrate System with Resistive Heating”, F. Avilés, A.I. Oliva, J.A. Aznarez, Applied Surface Science (ISSN:0169-4332), Vol. 206(1), 2003, 336-344. [Http link.](#)
2. “Thermal Microstrains Measured by Atomic Force Microscopy”, F. Avilés, O. Ceh, and A.I. Oliva, Review of Scientific Instruments (ISSN:0034-6748), Vol. 74(7), 2003, 3356-3361. [Http link.](#)
3. “Physical Properties of Au and Al Thin Films Measured by Resistive Heating”, F. Avilés, O. Ceh, and A.I. Oliva, Surface Review and Letters (ISSN:0218-625X), Vol. 12(1), 2005, 101-106. <http://dx.doi.org/10.1142/S0218625X05006834>
4. “Elastic Foundation Analysis of Local Face Buckling in Debonded Sandwich Columns”, F. Avilés, L.A. Carlsson, Mechanics of Materials (ISSN:0167-6636), Vol. 37(10), 2005, 1026-1034. <http://dx.doi.org/10.1016/j.mechmat.2005.01.002>.
5. “Face Sheet Buckling of Debonded Sandwich Panels using a Two-Dimensional Elastic Foundation Approach”, F. Avilés, L.A. Carlsson, Mechanics of Advanced Materials and Structures (ISSN:1537-6494), Vol. 12(5), 2005, 349-361. <http://dx.doi.org/10.1080/15376490591008110>.
6. “Crack Path in Foam Cored DCB Sandwich Fracture Specimens”, L.A. Carlsson, R.C. Matteson, F. Avilés, D.C. Loup, Composites Science and Technology (ISSN:0266-3538), 20th Anniversary Issue, Vol. 65(15-16), 2005, 2612-2621. <http://dx.doi.org/10.1016/j.compscitech.2005.05.013>.
7. “Experimental Study of Debonded Sandwich Panels Loaded in Compression”, F. Avilés and L.A. Carlsson, Journal of Sandwich Structures and Materials (ISSN:1099-6362), Vol. 8(1), 2006, 7-31. <http://dx.doi.org/10.1177/1099636206054996>.
8. “Three-dimensional Finite Element Analysis of Debonded Sandwich Panels”, F. Avilés and L.A. Carlsson, Journal of Composite Materials (ISSN:0021-9983), Vol. 40(11), 2006, 993-1008. <http://dx.doi.org/10.1177/0021998305056387>.
9. “Influence of Face/Core Interface on Debond Toughness of Foam and Balsa Cored Sandwich”, A. Truxel, F. Avilés, L.A. Carlsson, J. Grenestedt, and K. Millay, Journal of Sandwich Structures and Materials (ISSN:1099-6362), Vol. 8(3), 2006, 237-258. <http://dx.doi.org/10.1177/1099636206062570>.
10. “Post-buckling and Debond Propagation in Sandwich Panels Subject to In-plane Loading”, F. Avilés, L.A. Carlsson, Engineering Fracture Mechanics (ISSN:0013-7944), Vol. 74(5), 2007, 794-806. <http://dx.doi.org/10.1016/j.engfracmech.2006.04.023>.
11. “Analysis of the Sandwich DCB Specimen for Debond Characterization”, F. Avilés, L.A. Carlsson, Engineering Fracture Mechanics (ISSN:0013-7944), Vol. 75(2), 2008, 153-168. <http://dx.doi.org/10.1016/j.engfracmech.2007.03.045>.
12. “Mechanical properties of gold nanometric films onto a polymeric substrate”, P. Vázquez, F. Avilés, A.I. Oliva, Surface and Coatings Technology (ISSN:0257-8972), Vol. 202(8), 2008, 1556-1563. <http://dx.doi.org/10.1016/j.surfcoat.2007.07.009>.
13. “Effective Properties of Multiwalled Carbon Nanotube/Epoxy Composites Using Two Different Tubes”, A. Hernández-Pérez, F. Avilés, A. May-Pat, A. Valadez-González, P.J. Herrera-Franco, P. Bartolo-Pérez, Composites Science and Technology (ISSN: 0266-

- 3538), Vol. 68(6), 2008, 1422-1431.
<http://dx.doi.org/10.1016/j.compscitech.2007.11.001>.
14. "Determination of Elastic Modulus in a Bimaterial through a one-dimensional Laminated Model", F. Avilés, A.I. Oliva, A. May-Pat, *Journal of Materials Engineering and Performance* (ISSN:1059-9495), Vol. 17(4), 2008, 482-488.
<http://dx.doi.org/10.1007/s11665-007-9185-1>.
 15. "Elasto-plastic Properties of Gold Thin Films Deposited over Polymeric Substrates", F. Aviles, L. Llanes, A.I. Oliva, *Journal of Materials Science* (ISSN:0022-2461), Vol. 44 (10), 2009, 2590-2598. <http://dx.doi.org/10.1007/s10853-009-3339-5>.
 16. "Investigation of the Sandwich Plate Twist Test", F. Avilés, L.A. Carlsson, G. Browning, K. Millay, *Experimental Mechanics* (ISSN:0014-4851), Vol. 49(6), 2009, 813-822.
<http://dx.doi.org/10.1007/s11340-008-9199-0>.
 17. "Evaluation of mild acid oxidation treatments for MWCNT functionalization", F. Avilés, J.V. Cauich-Rodríguez, L. Moo-Tah, A. May-Pat, R. Vargas-Coronado, *Carbon* (ISSN:0008-6223), Vol. 47(13), 2009, 2970-2975.
<http://dx.doi.org/10.1016/j.carbon.2009.06.044>.
 18. "Failure Investigation of Debonded Sandwich Columns: An Experimental and Numerical Study", R. Moslemian, C. Berggreen, L. A. Carlsson, F. Avilés, *Journal of Mechanics of Materials and Structures* (ISSN:1559-3959), Vol. 4(7-8), 2009, 1469-1487. [Link http://dx.doi.org/10.1016/j.jmm.2009.07.004](http://dx.doi.org/10.1016/j.jmm.2009.07.004).
 19. "Mechanical Degradation of Foam-Cored Sandwich Materials Exposed to High Moisture", F. Avilés, M. Aguilar-Montero, *Composite Structures* (ISSN:0263-8223), Vol. 92(1), 2010, 122-129. <http://dx.doi.org/10.1016/j.compstruct.2009.07.004>.
 20. "Correlations between mechanical stress, electrical conductivity, and nanostructure in Al thin films on a polymer substrate", J.R. Bautista-Quijano, F. Avilés, A.I. Oliva, O. Ceh, J.E. Corona, *Materials Characterization* (ISSN:1044-5803), Vol. 61(3), 2010, 325-329.
<http://dx.doi.org/10.1016/j.matchar.2009.12.016>.
 21. "Moisture Absorption in Foam-Cored Composite Sandwich Structures", F. Avilés, M. Aguilar-Montero, *Polymer Composites* (ISSN:1548-0569), Vol. 31(4), 2010, 714-722.
<http://dx.doi.org/10.1002/pc.20872>.
 22. "Modeling the influence of interphase on the elastic properties of carbon nanotube composites", A. Hernández-Pérez, F. Avilés, *Computational Materials Science* (ISSN: 0927-0256), Vol. 47(4), 2010, 926-933.
<http://dx.doi.org/10.1016/j.commatsci.2009.11.025>.
 23. "Influence of carbon nanotube clustering on the electrical conductivity of polymer composite films", J.O. Aguilar, J.R. Bautista-Quijano, F. Avilés, *eXPRESS Polymer Letters* (ISSN:1788-618X), Vol. 4(5), 2010, 292-299.
<http://dx.doi.org/10.3144/expresspolymlett.2010.37>.
 24. "Strain sensing capabilities of a MWCNT-Polysulfone film", J.R. Bautista-Quijano, F. Avilés, J.O. Aguilar, A. Tapia, *Sensors and Actuators:Part A* (ISSN:0924-4247), Vol. 159 (2), 2010, 135-140. <http://dx.doi.org/10.1016/j.sna.2010.03.005>.
 25. "Mechanical properties of sandwich panels with perforated foam cores", A. May-Pat, F. Avilés, J.O. Aguilar, *Journal of Sandwich Structures and Materials* (ISSN:1099-6362), Vol. 13(4), 2011, 427-444. <http://dx.doi.org/10.1177/1099636210379769>.
 26. "Experimental determination of torsion and shear properties of sandwich panels and laminated composites by the plate twist test", F. Avilés, F. Couoh-Solís, L.A. Carlsson, A. Hernández-Pérez, A. May-Pat, *Composite Structures* (ISSN:0263-8223), Vol. 93(7), 2011, 1923-1928. <http://dx.doi.org/10.1016/j.compstruct.2011.02.001>.

27. "Oxidation and silanization of MWCNTs for MWCNT/vinylester composites", F. Avilés, J.V. Cauich-Rodríguez, J.A. Rodríguez-González, A. May-Pat, eXPRESS Polymer Letters (ISSN:1788-618X), Vol. 5(9), 2011, 766-776. <http://dx.doi.org/10.3144/expresspolymlett.2011.75>.
28. "Electrical and piezoresistive properties of multi-walled carbon nanotube/polymer composite films aligned by an electric field", A.I. Oliva-Avilés, F. Avilés, V. Sosa, Carbon (ISSN: 0008-6223), Vol. 49(9), 2011, 2989-2997. <http://dx.doi.org/10.1016/j.carbon.2011.03.017>.
29. "TEM observations of MWCNTs oxidized by mild experimental conditions", F. Avilés, A. Ponce, J.V. Cauich-Rodríguez, G.T. Martínez, Fullerenes, Nanotubes and Carbon Nanostructures (ISSN: 1536-383X), Vol. 20(1), 2012, 49-55. <http://dx.doi.org/10.1080/1536383X.2010.533308>.
30. "Mechanical properties of PET composites using multi-walled carbon nanotubes functionalized by inorganic and itaconic acids", A. May-Pat, F. Avilés, P. Toro, M. Yazdani-Pedram, J.V. Cauich-Rodríguez, eXPRESS Polymer Letters (ISSN:1788-618X), Vol. 6(2), 2012, 96-106. <http://dx.doi.org/10.3144/expresspolymlett.2012.11>.
31. "A shear-corrected formulation for the sandwich twist specimen", F. Avilés, L.A. Carlsson, A. May-Pat, Experimental Mechanics (ISSN:0014-4851), Vol. 52(1), 2012, 17-23. <http://dx.doi.org/10.1007/s11340-011-9501-4>.
32. "Influence of vacancies on the elastic properties of a graphene sheet", A. Tapia, R. Peón-Escalante, C. Villanueva, F. Avilés, Computational Materials Science (ISSN: 0927-0256), Vol. 55, 2012, 255-262. <http://dx.doi.org/10.1016/j.commatsci.2011.12.013>.
33. "On the merits of Raman spectroscopy and thermogravimetric analysis to assess carbon nanotube structural modifications", R. Schönfelder, F. Avilés, A. Bachmatiuk, J.V. Cauich-Rodríguez, M. Knupfer, B. Büchner, M.H. Rummeli, Applied Physics A (ISSN: 0947-8396), Vol. 106(4), 2012, 843-852. <http://dx.doi.org/10.1007/s00339-012-6787-8>.
34. "Cyclic tension and compression piezoresistivity of carbon nanotube/vinyl ester composites in the elastic and plastic regimes", J.J. Ku-Herrera, F. Avilés, Carbon (ISSN:0008-6223), Vol. 50(7), 2012, 2592-2598. <http://dx.doi.org/10.1016/j.carbon.2012.02.018>.
35. "Vibration modeling and testing of bilayer beams for determination of film elastic modulus", J.A. Hoy Benítez, F. Avilés, F. Gamboa, R. Peón-Escalante, A.I. Oliva. Measurement Science and Technology (ISSN:0957-0233), Vol. 23(4), 2012, 045605 (9 pp). <http://dx.doi.org/10.1088/0957-0233/23/4/045605>.
36. "First order shear deformation analysis of the sandwich plate twist specimen", A. Hernández-Pérez, F. Avilés, L.A. Carlsson, Journal of Sandwich Structures and Materials (ISSN:1099-6362), Vol. 14(3), 2012, 341-357. <http://dx.doi.org/10.1177/1099636212447641>.
37. "A modified short beam shear specimen for characterization of interfacial strength in nanocomposites", J.A. Rodríguez-González, F. Avilés, Polymer Testing (ISSN:0142-9418), Vol. 31(6), 2012, 792-799. <http://dx.doi.org/10.1016/j.polymertesting.2012.04.011>.
38. "Elastic modulus determination of Al-Cu film alloys prepared by thermal diffusion", E. Huerta, A.I. Oliva, F. Avilés, J. González-Hernández, J.E. Corona, Journal of Nanotechnology (ISSN:1687-9503), Vol. 2012, article ID 895131, 2012, 8 pp. <http://dx.doi.org/10.1155/2012/895131>.

39. "Dynamics of carbon nanotube alignment by electric fields", A.I. Oliva-Avilés, F. Avilés, V. Sosa, A.I. Oliva, F. Gamboa, *Nanotechnology* (ISSN:0957-4484), Vol. 23, 2012, 465710 (10 pp). <http://dx.doi.org/10.1088/0957-4484/23/46/465710>.
40. "On the contribution of carbon nanotube deformation to piezoresistivity of carbon nanotube/polymer composites", A.I. Oliva-Avilés, F. Avilés, G.D. Seidel, V. Sosa, *Composites: Part B* (ISSN:1359-8368), Vol. 47, 2013, 200-206. <http://dx.doi.org/10.1016/j.compositesb.2012.09.091>.
41. "Influence of processing method on the mechanical and electrical properties of MWCNT/PET composites", O. Rodríguez-Uicab, A. May-Pat, F. Avilés, P. Toro, M. Yazdani-Pedram, *Journal of Materials* (ISSN:2314-4866), Vol. 2013, article ID 656372, 2013, 10 pp. <http://dx.doi.org/10.1155/2013/656372>.
42. "Mechanical and thermal properties of multiwalled carbon nanotube/polypropylene composites using itaconic acid as compatibilizer and coupling agent", M. Yazdani-Pedram, C. Menzel, P.Toro, R. Quijada, A. May-Pat, F. Avilés, *Macromolecular Research* (ISSN:1598-5032), Vol. 21(2), 2013, 153-160. <http://dx.doi.org/10.1007/s13233-013-1006-9>.
43. "Influence of silane concentration on the silanization of carbon nanotubes", F. Avilés, C.A. Sierra-Chi, A. Nistal, A. May-Pat, F. Rubio, J. Rubio. *Carbon* (ISSN: 0008-6223), Vol. 57, 2013, 520-529. <http://dx.doi.org/10.1016/j.carbon.2013.02.031>.
44. "Evaluation of the sandwich plate twist test to characterize mode III fracture of sandwich panels with a face/core interface crack". A. Hernández-Pérez, F. Avilés, L.A. Carlsson. *Engineering Fracture Mechanics* (ISSN:0013-7944), Vol. 104, 2013, 41-55. <http://dx.doi.org/10.1016/j.engfracmech.2013.03.014>.
45. "Self-sensing of elastic strain, matrix yielding and plasticity in MWCNT/vinyl ester composites", J.J. Ku-Herrera, F. Avilés, G.D. Seidel, *Smart Materials and Structures* (ISSN:0964-1726), Vol. 22, 2013, 085003 (7 pp). <http://dx.doi.org/10.1088/0964-1726/22/8/085003>.
46. "Sensing of large strain using multiwall carbon nanotube/segmented polyurethane composites", J.R. Bautista-Quijano, F. Avilés, J.V. Cauich-Rodriguez, *Journal of Applied Polymer Science* (ISSN:1097-4628), Vol. 130(1), 2013, 375-382. <http://dx.doi.org/10.1002/app.39177>.
47. "Coupled electro-mechanical properties of multiwall carbon nanotube/polypropylene composites for strain sensing applications", O. Zetina-Hernández, S. Duarte-Aranda, A. May-Pat, G. Canché-Escamilla, J. Uribe-Calderon, P.I. Gonzalez-Chi, F. Avilés, *Journal of Materials Science* (ISSN:0022-2461), Vol. 48, 2013, 7587-7593. <http://dx.doi.org/10.1007/s10853-013-7575-3>.
48. "Tensile piezoresistivity and disruption of percolation in singlewall and multiwall carbon nanotube/polyurethane composites", J.R. Bautista-Quijano, F. Avilés, J.V. Cauich-Rodriguez, R. Schönfelder, A. Bachmatiuk, T. Gemming, M.H. Rummeli, *Synthetic Metals* (ISSN: 0379-6779), Vol. 185-186, 2013, 96-102. <http://dx.doi.org/10.1016/j.synthmet.2013.09.041>.
49. "Influence of architecture on the Raman spectra of acid-treated carbon nanotubes", R. Schönfelder, F. Avilés, M. Knupfer, J.A. Azamar-Barrios, P.I Gonzalez-Chi, M.H. Rummeli, *Journal of Experimental Nanoscience* (ISSN:1745-8080), Vol. 9, 2014, 931-941. <http://dx.doi.org/10.1080/17458080.2012.750763>.
50. "An assessment of finite element analysis to predict the elastic modulus and Poisson's ratio of singlewall carbon nanotubes", G. Domínguez-Rodríguez, A. Tapia, F. Avilés,

- Computational Materials Science (ISSN: 0927-0256), Vol. 82, 2014, 257-263.
<http://dx.doi.org/10.1016/j.commatsci.2013.10.003>.
51. "The bond force constant and bulk modulus of C₆₀", R. Peón-Escalante, C. Villanueva, R. Quintal, F. Avilés, A. Tapia, Computational Materials Science (ISSN: 0927-0256), Vol. 83, 2014, 120-126. <http://dx.doi.org/10.1016/j.commatsci.2013.11.011>.
 52. "Analysis of twist stiffness of single and double-wall corrugated boards", A. Hernández-Pérez, R. Hägglund, L.A. Carlsson, F. Avilés, Composite Structures (ISSN:0263-8223), Vol. 110, 2014, 7-15.
<http://dx.doi.org/10.1016/j.compstruct.2013.11.006>.
 53. "Influence of nanotube physicochemical properties on the decoration of multiwall carbon nanotubes with magnetic particles", E.G. Uc-Cayetano, F. Avilés, J.V. Cauich-Rodríguez, R. Schönfelder, A. Bachmatiuk, M.H. Rummeli, F. Rubio, M.P. Gutiérrez-Amador, G.J. Cruz, Journal of Nanoparticle Research (ISSN:1388-0764), Vol. 16, 2014, 2192 (13 pp). <http://dx.doi.org/10.1007/s11051-013-2192-2>.
 54. "A beam specimen to measure the face/core fracture toughness of sandwich materials under a tearing loading mode", J.A. Rodríguez-González, A. May-Pat, F. Avilés, International Journal of Mechanical Sciences (ISSN:0020-7403), Vol. 79, 2014, 84-94.
<http://dx.doi.org/10.1016/j.ijmecsci.2013.12.002>.
 55. "Dielectrophoretic modeling of the dynamic carbon nanotube network formation in viscous media under alternating current electric fields", A.I. Oliva-Avilés, F. Avilés, V. Sosa, G.D. Seidel, Carbon (ISSN:0008-6223), Vol. 69, 2014, 342-354.
<http://dx.doi.org/10.1016/j.carbon.2013.12.035>.
 56. "Long term water uptake of a low density polyvinyl chloride foam and its effect on the foam microstructure and mechanical properties", A. May-Pat, F. Avilés, Materials and Design (ISSN:0261-3069), Vol. 57, 2014, 728-735.
<http://dx.doi.org/10.1016/j.matdes.2014.01.042>.
 57. "A vibrational approach to determine the elastic modulus of individual thin films in multilayers", A. López-Puerto, F. Avilés, F. Gamboa, A.I. Oliva, Thin solid films (ISSN:0040-6090), Vol. 565, 2014, 228-236.<http://dx.doi.org/10.1016/j.tsf.2014.06.024>
 58. "On the role of fiber coating in the deposition of multiwall carbon nanotubes onto glass fibers", J.J. Ku-Herrera, J.V. Cauich Rodríguez, F. Avilés, Nanoscience and Nanotechnology Letters (ISSN:1941-4900), Vol. 6, 2014, 932-935.
<http://dx.doi.org/10.1166/nml.2014.1844>.
 59. "The bond force constants of graphene and benzene calculated by density functional theory", J. Medina, F. Avilés, A. Tapia, Molecular Physics (ISSN: 0026-8976), Vol. 113, 2015, 1297-1305. <http://dx.doi.org/10.1080/00268976.2014.986241>.
 60. "Thermal effects on the physical properties of limestone from the Yucatan peninsula", W.S. González-Gómez, P. Quintana, A. May-Pat, F. Avilés, J. May-Crespo, J.J. Alvarado-Gil, International Journal of Rock Mechanics and Mining Sciences (ISSN: 1365-1609), Technical Note, Vol. 75, 2015, 182-189.
<http://dx.doi.org/10.1016/j.ijrmms.2014.12.010>.
 61. "Interactions between the glass fiber coating and oxidized carbon nanotubes", J.J. Ku-Herrera, F. Avilés, A. Nistal, J. V. Cauich-Rodríguez, F. Rubio, J. Rubio, P. Bartolo-Pérez, Applied Surface Science (ISSN:0169-4332), Vol. 330, 2015, 383-392.
[doi:10.1016/j.apsusc.2015.01.025](http://dx.doi.org/10.1016/j.apsusc.2015.01.025).
 62. "Modeling of mesoscale dispersion effect on the piezoresistivity of carbon nanotube-polymer nanocomposites via 3D computational multiscale micromechanics methods", X.

- Ren, A.K. Chaurasia, A.I. Oliva-Avilés, J.J. Ku-Herrera, G.D. Seidel, F. Avilés, *Smart Materials and Structures* (ISSN:0964-1726), Vol. 24, 2015, 065031 (17 p). [doi:10.1088/0964-1726/24/6/065031](https://doi.org/10.1088/0964-1726/24/6/065031).
63. “The bond force constant and bulk modulus of small fullerenes using density functional theory and finite element analysis”, A. Tapia, C. Villanueva, R. Peón-Escalante, R. Quintal, J. Medina, F. Peñuñuri, F. Avilés, *Journal of Molecular Modeling* (ISSN: 1610-2940), Vol. 21, 2015, 139 (10 p). [Doi:10.1007/s00894-015-2649-6](https://doi.org/10.1007/s00894-015-2649-6).
 64. “Effect of wettability and surface roughness on the adhesion properties of collagen on PDMS films treated by capacitively coupled oxygen plasma”, J.A. Juárez-Moreno, A. Ávila-Ortega, A.I. Oliva-Arias, F. Avilés, J.V. Cauich-Rodríguez, *Applied Surface Science* (ISSN: 0169-4332), Vol. 349, 2015, 763-773. <http://dx.doi.org/10.1016/j.apsusc.2015.05.063>.
 65. “Anisotropic compressive properties of multiwall carbon nanotube/polyurethane foams”, J.J. Espadas-Escalante, F. Avilés, *Mechanics of Materials* (ISSN: 0167-6636), Vol.91, 2015, 167-176. <http://dx.doi.org/10.1016/j.mechmat.2015.07.006>.
 66. “Influence of carbon nanotube on the piezoresistive behavior of multiwall carbon nanotube/polymer composites”, F. Avilés, A. May-Pat, G. Canché-Escamilla, O. Rodríguez-Uicab, J.J. Ku-Herrera, S. Duarte-Aranda, J. Uribe-Calderon, P.I. Gonzalez-Chi, L. Arronche, V. La Saponara, *Journal of Intelligent Material Systems and Structures* (ISSN:1045-389X), Vol. 27, 2016, 92-103. [doi: 10.1177/1045389X14560367](https://doi.org/10.1177/1045389X14560367).
 67. “Effect of the morphology of thermally reduced graphite oxide on the mechanical and electrical properties of natural rubber nanocomposites”, H. Aguilar-Bolados, M.A. Lopez-Manchado, J. Brasero, F. Avilés, M. Yazdani-Pedram, *Composites Part B* (ISSN:1359-8368), Vol. 87, 2016, 350-356. <http://dx.doi.org/10.1016/j.compositesb.2015.08.079>.
 68. “A vibrating reed apparatus to measure the natural frequency of multilayered thin films”, F. Gamboa, A. López, F. Avilés, J. E. Corona, A. I. Oliva, *Measurement Science and Technology* (ISSN: 0957-0233), Vol. 27, 2016, 045002 (8 p). [doi:10.1088/0957-0233/27/4/045002](https://doi.org/10.1088/0957-0233/27/4/045002).
 69. “Tailored self-sensing of failure mechanisms in glass fiber/carbon nanotube/vinyl ester multiscale hierarchical composites loaded in tension”, J.J. Ku-Herrera, B. Pinto, V. La Saponara, R.H.R. Castro, F. Avilés, *Journal of Multifunctional Composites* (ISSN: 2168-4278), special issue on “Novel Sensing Techniques and Approaches in Composite Materials”, Vol. 2, 2014, 171-181. [doi:10.12783/issn.2168-4286/2.4/Ku-Herrera](https://doi.org/10.12783/issn.2168-4286/2.4/Ku-Herrera). Notice: Paper was published in February 2016 but the special issue was placed retroactively as 2014.
 70. “Piezoresistive sensing of strain and damage in carbon/epoxy rectangular and I-shaped cross-section beams in flexure”, B. Pinto, J.J. Ku-Herrera, S. Kern, V. La Saponara, F. Avilés, *Journal of Multifunctional Composites* (ISSN: 2168-4278), special issue on “Novel Sensing Techniques and Approaches in Composite Materials”, Vol. 2, 2014, 183-194. [doi:10.12783/issn.2168-4286/2.4/Pinto](https://doi.org/10.12783/issn.2168-4286/2.4/Pinto). Notice: Paper was published in February 2016 but the special issue was placed retroactively as 2014.
 71. “An assessment of the role of fiber coating and suspending fluid on the deposition of carbon nanotubes onto glass fibers for multiscale composites”, J.J. Ku-Herrera, A. May-Pat, F. Avilés, *Advanced Engineering Materials* (ISSN: 1438-1656), Vol.18, 2016, 963-971. <http://dx.doi.org/10.1002/adem.201500389>.

72. "Influence of rigid segment and carbon nanotube concentration on the cyclic piezoresistive and hysteretic behavior of multiwall carbon nanotube/segmented polyurethane composites", C. Lozano-Pérez, J.V. Cauich-Rodríguez, F. Avilés, *Composites Science and Technology* (ISSN:0266-3538), Vol. 128, 2016, 25-32. <http://dx.doi.org/10.1016/j.compscitech.2016.03.010>.
73. "Self-sensing of damage progression in unidirectional multiscale hierarchical composites subjected to cyclic tensile loading", J.J. Ku-Herrera, O.F. Pacheco-Salazar, C.R. Ríos-Soberanis, G. Domínguez-Rodríguez, F. Avilés, *Sensors* (ISSN: 1424-8220), Sensors, special issue on "Integrated Structural Health Monitoring in Polymeric Composites", Vol. 16 (3), 400, 2016, 13 pp. [doi:10.3390/s16030400](https://doi.org/10.3390/s16030400).
74. "Dynamic evolution of interacting carbon nanotubes suspended in a fluid using a dielectrophoretic framework", A.I. Oliva-Avilés, V.V. Zozulya, F. Gamboa, F. Avilés, *Physica E* (ISSN: 1386-9477), Vol. 83, 2016, 7-21. <http://dx.doi.org/10.1016/j.physe.2016.03.043>.
75. "Deposition of carbon nanotubes onto aramid fibers using as-received and chemically modified fibers", O. Rodríguez-Uicab, F. Avilés, P.I. Gonzalez-Chi, G. Canché-Escamilla, S. Duarte-Aranda, M. Yazdani-Pedram, P. Toro, F. Gamboa, M.A. Mazo, A. Nistal, J. Rubio, *Applied Surface Science* (ISSN:0169-4332). Vol. 385, 2016, 379-390. <http://dx.doi.org/10.1016/j.apsusc.2016.05.037>.
76. "Enhancement of electrochemical glucose sensing by using multiwall carbon nanotubes decorated with iron oxide nanoparticles", E.G. Uc-Cayetano, L.C. Ordóñez, J.V. Cauich-Rodríguez, F. Avilés. *International Journal of Electrochemical Science* (ISSN 1452-3981), Vol. 11, 2016, 6356-6369. [doi: 10.20964/2016.07.85](https://doi.org/10.20964/2016.07.85).
77. "A dedicated electric oven for characterization of thermoresistive polymer nanocomposites" M. Cen-Puc, G. Pool, F. Avilés, A. May-Pat, S. Flores, J. Lugo, G. Torres, L. Gus, A. I. Oliva, J. E. Corona. *Journal of Applied Research and Technology* (ISSN: 1665-6423), Vol. 14, 2016, 268-277. <http://dx.doi.org/10.1016/j.jart.2016.06.004>.
78. "Influence of structural defects on the electrical properties of carbon nanotubes and their polymer composites", G. Domínguez-Rodríguez, A. Tapia, G.D. Seidel, F. Avilés. *Advanced Engineering Materials* (online ISSN: 1527-2648), Vol. 18, 2016, 1897-1905. [DOI: 10.1002/adem.201600116](https://doi.org/10.1002/adem.201600116).
79. "Thermal conductivity and flammability of multiwall carbon nanotube/polyurethane foam composites", J.J. Espadas-Escalante, F. Avilés, P.I. Gonzalez-Chi, A.I. Oliva, *Journal of Cellular Plastics* (ISSN: 0021955X), Vol. 53(2), 2017, 215–230. [Doi: 10.1177/0021955X16644893](https://doi.org/10.1177/0021955X16644893).
80. "Influence of rigid segment content on the piezoresistive behavior of multiwall carbon nanotube/segmented polyurethane composites", C. Lozano-Pérez, J.V. Cauich-Rodríguez, F. Avilés. *Journal of Applied Polymer Science* (ISSN:1097-4628), Vol. 134(6), 2017, 44448 (pp.1-12). [DOI: 10.1002/APP.44448](https://doi.org/10.1002/APP.44448).
81. "Influence of the morphology of carbon nanostructures on the piezoresistivity of hybrid natural rubber nanocomposites", H. Aguilar-Bolados, M. Yazdani-Pedram, A. Contreras-Cid, M.A. López-Manchado, A. May-Pat, F. Avilés. *Composites: Part B* (ISSN:1359-8368), Vol. 109, 2017, 147-154. <http://dx.doi.org/10.1016/j.compositesb.2016.10.057>.
82. "Temperature coefficient of resistance and thermal expansion coefficient of 10-nm thick gold films", A.I. Oliva, J. M. Lugo, R.A. Gurubel-Gonzalez, R.J. Centeno, J.E. Corona,

- F. Avilés. *Thin solid films* (ISSN:0040-6090), Vol. 623, 2017, 84-89. <http://dx.doi.org/10.1016/j.tsf.2016.12.028>.
83. “Hierarchical multiscale modeling of the effect of carbon nanotube damage on the elastic properties of polymer nanocomposites”, G. Domínguez-Rodríguez, A.K. Chaurasia, G.D. Seidel, A. Tapia, F. Avilés. *Journal of Mechanics of Materials and Structures* (ISSN: 1559-3959), Vol. 12(3), 2017, 263-287. DOI 10.2140/jomms.2017.12.263.
 84. “The bond force constants and elastic properties of boron nitride nanosheets and nanoribbons using a hierarchical modeling approach”, A. Tapia, C. Cab, A. Hernández-Pérez, C. Villanueva, F. Peñuñuri, F. Avilés. *Physica E* (ISSN: 1386-9477), Vol. 89, 2017, 183-193. <http://dx.doi.org/10.1016/j.physe.2016.12.003>.
 85. “Effect of the type of plasma on the polydimethylsiloxane/collagen composites adhesive properties”, J.A. Juárez-Moreno, L.G. Brito-Argáez, A. Ávila-Ortega, A.I. Oliva, F. Avilés, J.V. Cauich-Rodríguez. *International Journal of Adhesion and Adhesives* (ISSN: 0143-7496), Vol. 77, 2017, 85-95. <http://dx.doi.org/10.1016/j.ijadhadh.2017.03.010>.
 86. “Influence of aramid fiber treatment and carbon nanotubes on the interfacial strength of polypropylene hierarchical composites”, P.I. Gonzalez-Chi, O. Rodríguez-Uicab, C. Martín-Barrera, J. Uribe-Calderon, G. Canché-Escamilla, M. Yazdani-Pedram, A. May-Pat, F. Avilés, *Composites Part B* (ISSN:1359-8368), Vol. 122, 2017, 16-22. <http://dx.doi.org/10.1016/j.compositesb.2017.04.006>.
 87. “Experimental investigation of the thermoresistive response of multiwall carbon nanotube/polysulfone composites under heating-cooling cycles”, M. Cen-Puc, G. Pool, A.I. Oliva-Avilés, A. May-Pat, F. Avilés, *Composites Science and Technology* (ISSN:0266-3538), Vol. 151, 2017, 34-43. <https://doi.org/10.1016/j.compscitech.2017.08.003>.
 88. “Assessing local yield stress and fracture toughness of carbon nanotube poly(methyl methacrylate) composite by nanosectioning”, F. Sun, U. Wiklund, F. Avilés, E.K. Gamstedt, *Composites Science and Technology* (ISSN:0266-3538), Vol. 153, 2017, 95-102. <https://doi.org/10.1016/j.compscitech.2017.09.034>.
 89. “Thermoresistive mechanisms of carbon nanotube/polymer composites”, M. Cen-Puc, A.I. Oliva-Avilés, F. Avilés, *Physica E* (ISSN: 1386-9477), Vol. 95, 2018, 41-50. <https://doi.org/10.1016/j.physe.2017.09.001>.
 90. “Selective damage sensing in multiscale hierarchical composites by tailoring the location of carbon nanotubes”, J.J. Ku-Herrera, V. La Saponara, F. Avilés, *Journal of Intelligent Material Systems and Structures* (ISSN:1045-389X), Vol. 29(4), 2018, 553–562. <https://doi.org/10.1177/1045389X17711790>
 91. “A comparative study on the mechanical, electrical and piezoresistive properties of polymer composites using carbon nanostructures of different topology”, F. Avilés, A. May-Pat, M.A. López-Manchado, R. Verdejo, A. Bachmatiuk, M.H. Rummeli, *European Polymer Journal* (ISSN: 0014-3057), Vol. 99, 2018, 394-402. <https://doi.org/10.1016/j.eurpolymj.2017.12.038>.
 92. “Prediction of circumferential compliance and burst strength of polymeric vascular grafts”, O. Castillo-Cruz, C. Pérez-Aranda, F. Gamboa, J.V. Cauich-Rodríguez, D. Mantovani, F. Avilés. *Journal of the Mechanical Behavior of Biomedical Materials* (ISSN: 1751-6161), Vol. 79, 2018, 332-340. <https://doi.org/10.1016/j.jmbbm.2017.12.031>.
 93. “A dielectrophoretic study of the carbon nanotube chaining process and its dependence on the local electric fields”, A.I. Oliva-Avilés, A. Alonzo-García, V.V. Zozulya, F.

- Gamboa, J. Cob, F. Avilés. *Meccanica* (ISSN: 0025-6455), Vol. 53, 2018, 2773-2791. <https://doi.org/10.1007/s11012-018-0869-4>.
94. "Piezoresistivity, strain and damage self-sensing of polymer composites filled with carbon nanostructures", *Review article*. F. Avilés, A.I. Oliva-Avilés, M. Cen-Puc. *Advanced Engineering Materials* (ISSN: 1438-1656). Vol. 20, 2018, 1701159 (pp. 1-23). <https://doi.org/10.1002/adem.201701159>.
 95. "Examination of the plate twist specimen for thick specially orthotropic laminated composites and sandwich plates by using first-order shear deformation theory", R. Guillén-Rujano, A. Hernández-Pérez, F. Avilés, *Journal of Sandwich Structures and Materials* (ISSN:1099-6362), Vol. 21(7), 2019, 2239-2265. <https://doi.org/10.1177/1099636217748349>.
 96. "Electrical self-sensing of impact damage in multiscale hierarchical composites with tailored location of carbon nanotube networks", B.K.S. Isaac-Medina, A. Alonzo-García, F. Avilés. *Structural Health Monitoring* (ISSN: 14759217). Vol. 18(3), 2019, 806-818. <https://doi.org/10.1177/1475921718776198>.
 97. "Electrophoretic deposition of carbon nanotubes onto glass fibers for self-sensing relaxation-induced piezoresistivity of monofilament composites", A. Can-Ortiz, A.I. Oliva-Avilés, F. Gamboa, A. May-Pat, C. Velasco-Santos, F. Avilés. *Journal of Materials Science* (ISSN:0022-2461). Vol. 54(3), 2019, 2205-2221. <https://doi.org/10.1007/s10853-018-2965-1>.
 98. "Effect of carbon nanotube length on the piezoresistive response of poly (methyl methacrylate) nanocomposites", F. Avilés, A.I. Oliva, G. Ventura, A. May-Pat, A.I. Oliva-Avilés. *European Polymer Journal* (ISSN: 0014-3057). Vol. 110, 2019, 394-402. <https://doi.org/10.1016/j.eurpolymj.2018.12.002>.
 99. "Design and analysis of a burst strength device for testing vascular grafts", C. Pérez-Aranda, F. Gamboa, O. Castillo-Cruz, J.V. Cauich-Rodríguez, F. Avilés, *Review of Scientific Instruments* (ISSN: 0034-6748). Vol. 90 (1), 2019, 014301. <https://doi.org/10.1063/1.5037578>.
 100. "Electrical characterization of carbon-based fibers and their application for sensing relaxation-induced piezoresistivity in polymer composites". A. Can-Ortiz, J.L. Abot, F. Avilés, *Carbon* (ISSN: 0008-6223). Vol. 145, 2019, 119-130. <https://doi.org/10.1016/j.carbon.2018.12.108>.
 101. "Electrical self-sensing of strain and damage of thermoplastic hierarchical composites subjected to monotonic and cyclic tensile loading". O. Rodríguez-Uicab, C. Martín-Barrera, A. May-Pat, A. Can-Ortiz, P.I. González-Chi, F. Avilés, *Journal of Intelligent Material Systems and Structures* (ISSN:1045-389X). Vol. 30(10), 2019, 1527-1537. <https://doi.org/10.1177/1045389X19835962>.
 102. "Effects of temperature and tensile strain on the electrical resistance of nanometric gold films". A.I. Oliva, L. Ruiz-Tabasco, J. Ojeda-García, J.E. Corona, V. Sosa, F. Avilés. *Materials Research Express* (ISSN: 20531591). Vol. 6, 2019, 066407. <https://doi.org/10.1088/2053-1591/ab0c43>.
 103. "Mechanical properties of L-lysine based segmented polyurethane vascular grafts and their shape memory potential", O. Castillo-Cruz, F. Avilés, R. Vargas-Coronado, J. V. Cauich-Rodríguez, L.H. Chan-Chan, V. Sessini, L. Peponi. *Materials Science & Engineering: C* (ISSN: 0928-4931). Vol. 102, 2019, 887-895. <https://doi.org/10.1016/j.msec.2019.04.073>.

104. "Influence of concentration, length and orientation of carbon nanotubes on the electromechanical response of polymer nanocomposites", J. Cob, A. I. Oliva-Avilés, F. Avilés, A. I. Oliva. *Materials Research Express* (ISSN: 20531591). Vol. 6, 2019, 115024. <https://doi.org/10.1088/2053-1591/ab447b>.
105. "Influence of polymer matrix on the sensing capabilities of carbon nanotube polymeric thermistors", A. Balam, M. Cen-Puc, A. May-Pat, J.L. Abot, F. Avilés. *Smart Materials and Structures* (ISSN:0964-1726). Vol. 29, 2020, 015012. <https://dx.doi.org/10.1088/1361-665X/ab4e08>.
106. "Flexural electromechanical properties of multilayer graphene sheet/carbon nanotube/vinyl ester hybrid nanocomposites", C.A. Sierra-Chi, H. Aguilar-Bolados, M.A. López-Manchado, R. Verdejo, J.V. Cauich-Rodríguez, F. Avilés. *Composites Science and Technology* (ISSN:0266-3538), Vol. 194, 2020, 108164. <https://doi.org/10.1016/j.compscitech.2020.108164>.
107. "Electrical resistance sensing of epoxy curing using an embedded carbon nanotube yarn", O. Rodríguez-Uicab, J.L. Abot, F. Avilés. *Sensors* (ISSN: 1424-8220), Vol. 20, 2020, 3230. [doi:10.3390/s20113230](https://doi.org/10.3390/s20113230).
108. "Influence of electrode configuration on impact damage evaluation of self-sensing hierarchical composites", G. Uribe-Riestra, J. Ocampo-Bello, F. Gamboa, F. Mendoza-Santoyo, C. Pérez-López, E.A. Franco-Urquiza, M. Preud'homme, A. Castillo-Atoche, F. Avilés. *Journal of Intelligent Material Systems and Structures* (ISSN:1045-389X), Vol. 3(11), 2020, 1416-1429. <https://doi.org/10.1177/1045389X20919979>
109. "Cyclic thermoresistivity of freestanding and polymer embedded carbon nanotube yarns", A. Balam, M. Cen-Puc, O. Rodríguez-Uicab, J.L. Abot, F. Avilés. *Advanced Engineering Materials* (ISSN: 1438-1656), Vol. 22(10), 2020, 2000220. <https://doi.org/10.1002/adem.202000220>.
110. "Multifunctional sensing properties of polymer nanocomposites based on hybrid carbon nanostructures", R. Pech-Pisté, M. Cen-Puc, A. Balam, A. May-Pat, F. Avilés. *Materials Today Communications* (ISSN: 2352-4928), Vol. 25, 2020, 101472. <https://doi.org/10.1016/j.mtcomm.2020.101472>.
111. "Electro-mechanical properties of thermoplastic polyurethane films and tubes modified by hybrid carbon nanostructures for pressure sensing", C. Pérez-Aranda, Z. Valdez-Nava, F. Gamboa, J.V. Cauich-Rodríguez, F. Avilés. *Smart Materials and Structures* (ISSN:0964-1726), Vol. 29, 2020, 115021 (13 pp). <https://doi.org/10.1088/1361-665X/aba9e6>.
112. "An assessment of micromechanical models to predict the elastic constants of unidirectional polymer composites", A. Hernández-Pérez, H. Fuentes-Gutiérrez, F. López-Santos, E.R. Ledesma-Orozco, F. Avilés. *Mechanics of Advanced Materials and Structures* (ISSN:1537-6494), Vol. 28(11), 2021, 1128-1146. <https://doi.org/10.1080/15376494.2019.1645922>.
113. "Synthesis of sustainable, lightweight and electrically conductive polymer brushes grafted multi-layer graphene oxide", H. Aguilar-Bolados, M. Yazdani-Pedram, E. Quinteros-Jara, Q. Cuenca-Bracamonte, R. Quijada, J. Carretero-González, F. Avilés, M.A. Lopez-Manchado, R. Verdejo. *Polymer Testing* (ISSN: 0142-9418), Vol. 93, 2021, 106986 (9 pp). <https://doi.org/10.1016/j.polymertesting.2020.106986>.
114. "Closed-form solution and analysis of the plate twist test in sandwich and laminated composites", R. Guillén-Rujano, F. Avilés, A. Vidal-Lesso, A. Hernández-Pérez. *Mechanics of Materials* (ISSN:0167-6636), Vol. 155, 2021, 103753 (15 pp).

- <https://doi.org/10.1016/j.mechmat.2021.103753>.
115. “Measurement of in-plane and out-of-plane elastic properties of woven fabric composites using digital image correlation”, F. López-Santos, A. May-Pat, E.R. Ledesma-Orozco, A. Hernández-Pérez, F. Avilés. *Journal of Composite Materials* (ISSN:0021-9983), Vol. 55(9), 2021, 1231–124.
<https://doi.org/10.1177/0021998320967073>.
 116. “Effect of polymer viscosity and polymerization kinetics on the electrical response of carbon nanotube yarn/vinyl ester monofilament composites”, O. Rodríguez-Uicab, I. Guay, J. Abot, F. Avilés. *Polymers* (ISSN 2073-4360), Topical Collection "Advances in Polymeric Composites", Vol. 13(5), 2021, 783 (17 pp).
<https://doi.org/10.3390/polym13050783>.
 117. “Electromechanical properties of carbon-nanostructured elastomeric composites measured by digital image correlation”, C. Pérez-Aranda, F. Avilés. *Composites Part C* (ISSN:2666-6820), Vol. 5, 2021, 100161 (10 pp).
<https://doi.org/10.1016/j.jcomc.2021.100161>.
 118. “Investigation of directional effects on the electrical conductivity and piezoresistivity of carbon nanotube/polypropylene composites obtained by extrusion”, A. Balam, R.H. Cruz-Estrada, A. Castillo-Atoche, F. Avilés. *Journal of Materials Science* (ISSN:0022-2461), Vol. 56, 2021, 14570-14586. DOI: [10.1007/s10853-021-06223-3](https://doi.org/10.1007/s10853-021-06223-3).
 119. “A comparative study of the electrical and electromechanical responses of carbon nanotube/polypropylene composites in alternating and direct current”, A. Balam, R. Pech-Pisté, Z. Valdez-Nava, F. Gamboa, A. Castillo, F. Avilés. *Sensors* (ISSN: 1424-8220), Vol. 22, 2022, 484 (14 pp). <https://doi.org/10.3390/s22020484>.
 120. “Simulation of mechanical response of carbon nanotube yarns under uniaxial tensile loading”, A. Pirmoz, J. L. Abot, F. Avilés. *Mechanics of Materials* (ISSN:0167-6636), Vol. 165, 2022, 104144. <https://doi.org/10.1016/j.mechmat.2021.104144>.
 121. “Processing-structure-property relationship of multilayer graphene sheet thermosetting nanocomposites manufactured by calendaring”, I. Pérez, S. Flores, C. Ortiz, M. Rivero, J.E. Corona, A.I. Oliva, F. Avilés. *Polymer Composites* (ISSN:1548-0569), Vol. 43(4), 2022, 2150–2162. <https://doi.org/10.1002/pc.26528>.
 122. “An ultra-low-power strain sensing node for long-range wireless networks in carbon nanotube-based materials”, A. Hernández-Benítez, A. Balam, J. Vázquez-Castillo, J.J. Estrada-López, R. Quijano-Cetina, A. Bassam, F. Avilés, A. Castillo-Atoche. *IEEE Sensors Journal* (ISSN:1530-437X), Vol. 22(10), 2022, 9778-9786. doi: [10.1109/JSEN.2022.3162988](https://doi.org/10.1109/JSEN.2022.3162988).
 123. “Functionalization of few-layer graphene sheets and carbon nanotubes for generation of hybrids and their effect on the piezoresistive properties of polymeric nanocomposites”, C.A. Sierra-Chi, M.A. López-Manchado, J.V. Cauich-Rodríguez, F. Gamboa, A.I. Oliva, F. Avilés. *Synthetic Metals* (ISSN: 0379-6779), Vol. 289, 2022, 117121.
<https://doi.org/10.1016/j.synthmet.2022.117121>.

Last update: January 17, 2023.