Grégory Guisbiers, Ph.D.
Assistant Professor-Tenure Track

h-index=23, citations=1440, Source: Google scholar

A. Peer-Reviewed Publications

1. J. P. Palomares-Baez, J. M. Montejano-Carrizales, **G. Guisbiers**, J. L. Rodriguez-Lopez, *Shape competition among the five-fold truncated nanoparticles: growth path from the decahedron to the icosahedron*, ACS Nano (submitted)
2. J. A. Garcia-Monge, C. D. Vasquez-Colon, **G. Guisbiers**, A. A. Ayon, *Synergistic photoluminescent interaction of Si and CdTe quantum dots*, Microsystem Technologies (submitted)
3. R. Mendoza-Perez, **G. Guisbiers**, *Thermal stability and phase diagrams of Pt-Pd at the bulk- and nano- scales*, Calphad (submitted) **Invited paper!**
4. M. Kusper, **G. Guisbiers**, *Synthesis of aluminum oxide nanoparticles by laser ablation in liquids*, MRS Advances (2018, accepted)
5. E. Alkuam, E. Badradeen, **G. Guisbiers**, *Influence of CdS Morphology on the Efficiency of Dye-Sensitized Solar Cells*, ACS Omega (2018, accepted)

   http://dx.doi.org/10.1021/acsomega.8b01631
6. L. Bazan-Diaz, R. Mendoza-Cruz, J. Velasquez-Salazar, G. Plascencia-Villa, F. M. Ascencio-Aguirre, R. Herrera-Becerra, H. Ojeda-Galvan, **G. Guisbiers**, M. J. Yacaman, *Synthesis and properties of self-assembly of gold-copper nanoparticles into nanoribbons*, Langmuir 34 (2018) 9394-9401.

   https://pubs.acs.org/doi/10.1021/acs.langmuir.7b04187
7. H. H. Lara†, **G. Guisbiers**†, J Mendoza, L. C. Mimun, B. K. Vincent, J. Lopez-Ribot, K. L. Nash, *Synergistic antifungal effect on Candida albicans biofilm of chitosan-stabilized selenium nanoparticles synthesized by pulsed laser ablation in liquids*, International Journal of Nanomedicine 13 (2018) 2697-2708 †Equal contribution

   https://dx.doi.org/10.2147/IJN.S151285
8. **G. Guisbiers**, M. Jose-Yacaman, *Use of chemical functionalities to control stability of nanoparticles*, Encyclopedia of Interfacial Chemistry: Surface Science & Electrochemistry (2017) **Invited paper!**

   https://dx.doi.org/10.1016/B978-0-12-409547-2.13129-4
9. **G. Guisbiers**, R. Mendoza-Perez, *Comment on "Phase stability and segregation behavior of nickel based nano-alloys based on theory and simulation"*, Journal of Alloys and Compounds 723 (2017) 1079-1081.

   https://dx.doi.org/10.1016/j.jallcom.2017.06.308
10. R. Mendoza-Cruz†, L. Bazan-Diaz, J. J. Velazquez, J. E. Samaniego-Benitez, F. M. Ascencio-Aguirre, R. Herrera-Beccara, M. Jose-Yacaman, **G. Guisbiers**†, *Order-Disorder Phase Transitions in Au-Cu Nanocubes: Synthesis and Nanothermodynamics*, Nanoscale 9 (2017) 9267-9274, †Equal contribution

    https://dx.doi.org/10.1039/C7NR00028F

11. B. Bonham, **G. Guisbiers**, *Thermal stability and optical properties of Si-Ge nanoparticles*, Nanotechnology 28 (2017) 245702.

    http://iopscience.iop.org/article/10.1088/1361-6528/aa726b

12. **G. Guisbiers**, R. Mendoza-Perez, L. Bazan-Diaz, R. Mendoza-Cruz, J. J. Velazquez-Salazar, M. Jose-Yacaman, *Size and shape effects on the phase diagrams of nickel-based bimetallic nanoalloys*, Journal of Physical Chemistry C 121 (2017) 6930-6939.

    https://pubs.acs.org/doi/abs/10.1021/acs.jpcc.6b09115

13. **G. Guisbiers**, L. C. Mimun, R. Mendoza-Cruz, K. L. Nash, *Synthesis of tunable tellurium nanoparticles*, Semiconductor Science & Technology 32 (2017) 04LT01.

    http://iopscience.iop.org/article/10.1088/1361-6641/aa6173

14. **G. Guisbiers**, H. H. Lara, R. Mendoza-Cruz, G. Naranjo, B. A. Vincent, X. G. Peralta, K. L. Nash, *Inhibition of Candida albicans biofilm by pure selenium nanoparticles*, Nanomedicine: Nanotechnology, Biology, and Medicine 13 (2017) 1095-1103.

    https://dx.doi.org/10.1016/j.nano.2016.10.011

15. **G. Guisbiers,** Q. Wang, E. Khachatryan, L. C. Mimun, B. Vincent, R. Mendoza-Cruz, P. Larese-Casanova, T. J. Webster, K. L. Nash, *Inhibition of E. coli and S. aureus with selenium nanoparticles synthesized by pulsed laser ablation in liquids*, International Journal of Nanomedicine 11 (2016) 3731-3736.

    https://dx.doi.org/10.2147/IJN.S106289

16. **G. Guisbiers**, R. Mendoza-Cruz, L. Bazan-Diaz, J. Velazquez-Salazar, R. Mendoza-Perez, J. A. Robledo-Torres, J. M. Montejano, J. L. Rodriguez-Lopez, R. L. Whetten, M. Jose-Yacaman*, Response to comment on "Electrum, the gold-silver alloy : from the bulk scale to the nanoscale: synthesis, properties and segregation rules"*, ACS Nano 10 (2016) 10620-10622.

    https://pubs.acs.org/doi/abs/10.1021/acsnano.6b06045

17. **G. Guisbiers**, R. Mendoza-Cruz, L. Bazan-Diaz, J. Velazquez-Salazar, R. Mendoza-Perez, J. A. Robledo-Torres, J. M. Montejano, J. L. Rodriguez-Lopez, R. L. Whetten, M. Jose-Yacaman*, Electrum, the gold-silver alloy : from the bulk scale to the nanoscale: synthesis, properties and segregation rules*, ACS Nano 10 (2016) 188-198.

    https://pubs.acs.org/doi/abs/10.1021/acsnano.5b05755

18. R. Mendoza-Cruz, L. Bazan-Diaz, J. J. Velazquez-Salazar, D. Romeu, D. Bahena, R. Herrera-Becerra, **G. Guisbiers**, M. Jose-Yacaman, *Helical growth of ultrathin gold-copper nanowires with a self-assembled coil shape*, Nano Letters 16 (2016) 1568-1573.

    https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.5b04184

19. L. Bazan-Diaz, R. Mendoza-Cruz, J. J. Velazquez-Salazar, G. Plascencia-Villa, L. D. Romeu, J. Reyes-Gasga, R. Herrera, M. Jose-Yacaman, **G. Guisbiers**, *Gold-copper nanostars as photo-thermal agents: synthesis and advanced electron microscopy characterization*, Nanoscale 7 (2015) 20734-20742.

https://dx.doi.org/10.1039/C5NR06491K

20. O. Van Overschelde, **G. Guisbiers**, *Photo-fragmentation of selenium powder by excimer laser ablation in liquids*, Optics and laser technology 73 (2015) 156-161

    https://dx.doi.org/10.1016/j.optlastec.2015.04.020

21. F. Forcade, R. Snyders, **G. Guisbiers**, B. Gonzales, X. Noirfalise, E. Vigil, *Impact of the precursor on the crystalline constitution of nano-CuO/TiO₂ films*, Materials Research Bulletin 70 (2015) 248-253

    https://dx.doi.org/10.1016/j.materresbull.2015.04.031

22. **G. Guisbiers**, Q. Wang, E. Khachatryan, M.-J. Arellano-Jimenez, T. J. Webster, P. Larese-Casanova K. L. Nash, *Anti-bacterial selenium nanoparticles produced by UV/VIS/NIR pulsed nanosecond laser ablation in liquids*, Laser Physics Letters 12 (2015) 016003

    http://iopscience.iop.org/article/10.1088/1612-2011/12/1/016003

23. **G. Guisbiers**, S. Khanal, F. Ruiz-Zepeda, J. Roque de la Puente, M. Jose-Yacaman, *Cu-Ni alloy: mixed, core-shell or Janus nanoparticle?*, Nanoscale 6 (2014) 14630-14635.

    https://dx.doi.org/10.1039/C4NR05739B

24. **G. Guisbiers**, S. Mejia-Rosales, S. Khanal, F. Ruiz-Zepeda, R. L. Whetten, M. Jose-Yacaman, *Gold-Copper nanoalloy, "Tumbaga" in the era of nano: phase diagram and segregation*, Nano Letters 14 (2014) 6718-6726.

    https://pubs.acs.org/doi/abs/10.1021/nl503584q

25. O. Van Overschelde, **G. Guisbiers**, R. Snyders, *Green synthesis of selenium nanoparticles by excimer laser ablation in water*, APL Materials 1 (2013) 042114.

    https://dx.doi.org/10.1063/1.4824148

26. **G. Guisbiers**, M.-S. Colla, M. Coulombier, J.-P. Raskin, T. Pardoen, *Study of creep/relaxation mechanisms in thin freestanding nanocrystalline palladium films through the lab-on-chip technology*, Journal of Applied Physics 113 (2013) 024513.

    https://dx.doi.org/10.1063/1.4775398

27. **G. Guisbiers**, G. Abudukelimu, *Influence of Nanomorphology on the Melting Temperature of Convex Polyhedral Nanoparticles*, Journal of Nanoparticle Research 15 (2013) 1431.

    https://dx.doi.org/10.1007/s11051-013-1431-x

28. **G. Guisbiers**, S. Arscott, R. Snyders, *An accurate determination of the surface energy of solid selenium*, Applied Physics Letters 101 (2012) 231606

    https://dx.doi.org/10.1063/1.4769358

29. M. Coulombier, **G. Guisbiers**, M.-S. Colla, R. Vayrette, J.-P. Raskin, T. Pardoen, *On-chip stress relaxation testing method for free-standing thin film materials*, Review of Scientific Instruments 83 (2012) 105004.

https://dx.doi.org/10.1063/1.4758288

30. S. Palmas, A. Da Pozzo, F. Delogu, M. Mascia, A. Vacca, **G. Guisbiers**, *Characterization of TiO2 nanotubes obtained by electrochemical anodization in organic electrolytes*, Journal of Power Sources 204 (2012) 265-272.

    https://dx.doi.org/10.1016/j.jpowsour.2012.01.007

31. **G. Guisbiers**, *Review on the analytical models describing melting at the nanoscale*, Journal of Nanoscience Letters 2 (2012) 8, **Invited paper!**

    http://www.cognizure.com/abstract.aspx?p=109637236

32. **G. Guisbiers**, G. Abudukelimu, D. Hourlier, *Size-dependent catalytic and melting properties of platinum-palladium nanoparticles*, Nanoscale Research Letters 6 (2011) 396.

    https://dx.doi.org/10.1186/1556-276X-6-396

33. **G. Guisbiers**, *Schottky defects in nanoparticles*, Journal of Physical Chemistry C 115 (2011) 2616-2621.

    https://dx.doi.org/10.1021/jp108041q

34. **G. Guisbiers**, E. Herth, L. Buchaillot, *Mechanical characterization of aluminium nanofilms*, Microelectronic Engineering 88 (2011) 844-847.

    https://dx.doi.org/10.1016/j.mee.2010.06.028

35. X. Noirfalise, T. Godfroid, **G. Guisbiers**, R. Snyders, *Synthesis of fluorine doped zinc oxide by reactive magnetron sputtering*, Acta Materialia 59 (2011) 7521-7529.

    https://dx.doi.org/10.1016/j.actamat.2011.07.068

36. **G. Guisbiers**, E. Herth, L. Buchaillot, T. Pardoen, *Fracture toughness, hardness and young's modulus of tantalum nanocrystalline films*, Applied Physics Letters 97 (2010) 143115.

    https://dx.doi.org/10.1063/1.3496000

37. **G. Guisbiers**, *Size-dependent materials properties towards a universal equation*, Nanoscale Research Letters 5 (2010) 1132-1136.

    https://dx.doi.org/10.1007/s11671-010-9614-1

38. **G. Guisbiers**, D. Liu, Q. Jiang, L. Buchaillot, *Theoretical predictions of wurtzite III-nitrides nano-materials properties*, Physical Chemistry Chemical Physics 12 (2010) 7203-7210.

    https://dx.doi.org/10.1039/C002496A

39. **G. Guisbiers**, E. Herth, B. Legrand, N. Rolland, T. Lasri, L. Buchaillot, *Ashby's materials selection for radio frequency applications*, Microelectronic Engineering 87 (2010) 1792-1795.

    https://dx.doi.org/10.1016/j.mee.2009.10.016

40. M. Kazan, **G. Guisbiers**, S. Pereira, M. Correia, P. Masri, A. Bruyant, S. Volz, P. Royer, *Thermal conductivity of silicon bulk and nanowires: Effects of isotopic*

composition, phonon confinement, and surface roughness, Journal of Applied Physics 107 (2010) 083503.

https://dx.doi.org/10.1063/1.3340973

41. **G. Guisbiers**, L. Buchaillot, *Universal size/shape-dependent law for characteristic temperatures*, Physics Letters A 374 (2009) 305-308.

    https://dx.doi.org/10.1016/j.physleta.2009.10.054

42. **G. Guisbiers**, M. Wautelet, L. Buchaillot, *Phase diagrams and optical properties of phosphide, arsenide, antimonide binary and ternary III-V nanoalloys*, Physical Review B 79 (2009) 155426.

    https://dx.doi.org/10.1103/PhysRevB.79.155426

43. **G. Guisbiers**, L. Buchaillot, *Modeling the melting enthalpy of nanomaterials*, Journal of Physical Chemistry C 113 (2009) 3566-3568.

    https://dx.doi.org/10.1021/jp809338t

44. **G. Guisbiers**, M. Wautelet, L. Buchaillot, *Comparison of intrinsic residual stress models in metallic thin films*, Scripta Materialia 60 (2009) 419-422.

    https://dx.doi.org/10.1016/j.scriptamat.2008.11.014

45. O. Van Overschelde, **G. Guisbiers**, M. Wautelet, *Nanocrystallisation of anatase TiO_2 by laser treatment*, Journal of Physical Chemistry C 113 (2009) 15343-15345.

    https://dx.doi.org/10.1021/jp905163j

46. C. M. Fernandes, **G. Guisbiers**, S. Pereira, N. P. Barradas, E. Alves, A. M. R. Senos, M. T. Vieira, *Annealing Ni nanocrystalline on WC-Co*, Journal of Alloys and Compounds 482 (2009) 131-136.

    https://dx.doi.org/10.1016/j.jallcom.2009.04.106

47. **G. Guisbiers**, G. Abudukelimu, M. Wautelet, L. Buchaillot, *Size, shape, composition and segregation tuning of InGaAs thermo-optical properties*, Journal of Physical Chemistry C 112 (2008) 17889-17892.

    https://dx.doi.org/10.1021/jp805760h

48. **G. Guisbiers**, L. Buchaillot, *Size and shape effects on creep and diffusion at the nanoscale*, Nanotechnology 19 (2008) 435701.

    http://iopscience.iop.org/article/10.1088/0957-4484/19/43/435701/pdf

49. **G. Guisbiers**, L. Buchaillot, *Thermo-opto-mechanical properties of AlN nanostructures: a promising material for NEMS applications*, Journal of Physics D: Applied Physics 41 (2008) 172001.

    http://iopscience.iop.org/article/10.1088/0022-3727/41/17/172001/meta

50. **G. Guisbiers**, O. Van Overschelde, M. Wautelet, *Theoretical investigation of size and shape effects on the melting temperature and energy bandgap of TiO2 nanostructures*, Applied Physics Letters 92 (2008) 103121.

    https://dx.doi.org/10.1063/1.2897297

51. **G. Guisbiers**, M. Kazan, O. Van Overschelde, M. Wautelet, S. Pereira, *Mechanical and thermal properties of metallic and semiconductive nanostructures*, Journal of Physical Chemistry C 112 (2008) 4097-4103.

    https://dx.doi.org/10.1021/jp077371n

52. O. Van Overschelde, **G. Guisbiers**, R. Snyders, F. Hamadi, A. Hemberg, M. Wautelet, *Alternative to classic annealing treatments for fractally patterned TiO_2 thin films*, Journal of Applied Physics 104 (2008) 103106.

    https://dx.doi.org/10.1063/1.3021161

53. **G. Guisbiers**, S. Pereira, *Theoretical investigation of the size and shape effects on the melting temperature of ZnO nanostructures*, Nanotechnology 18 (2007) 435710.

    http://iopscience.iop.org/article/10.1088/0957-4484/18/43/435710/pdf

54. **G. Guisbiers**, O. Van Overschelde, M. Wautelet, *Nanoparticulate origin of intrinsic residual stress in thin films*, Acta Materialia 55 (2007) 3541-3546.

    https://dx.doi.org/10.1016/j.actamat.2007.02.003

55. **G. Guisbiers**, O. Van Overschelde, M. Wautelet, *Materials selection for thin films for radio frequency microelectromechanical systems*, Materials&Design 28 (2007) 1994-1997.

    https://dx.doi.org/10.1016/j.matdes.2006.04.006

56. **G. Guisbiers**, G. Abudukelimu, F. Clement, M. Wautelet, *Effects of shape on the phase stability of nanoparticles*, Journal of Computational and Theoretical Nanoscience 4 (2007) 309-315.

    https://dx.doi.org/10.1166/jctn.2007.2320

57. **G. Guisbiers**, O. Van Overschelde, M. Wautelet, Ph. Leclère, R. Lazzaroni, *Fractal dimension, growth mode and residual stress of metal thin films*, Journal of Physics D, Applied Physics 40 (2007) 1077-1079.

    http://iopscience.iop.org/article/10.1088/0022-3727/40/4/024/pdf

58. **G. Guisbiers**, M. Wautelet, *Materials selection for micro-electromechanical systems*, Materials&Design 28 (2007) 246-248.

    https://dx.doi.org/10.1016/j.matdes.2005.05.012

59. O. Van Overschelde, **G. Guisbiers**, M. Wautelet, *Microstructuring of TiO_2 thin films by laser-assisted diffraction processing*, Applied Surface Science 253 (2007) 7890-7894.

    https://dx.doi.org/10.1016/j.apsusc.2007.02.072

60. **G. Guisbiers**, M. Wautelet, *Size, shape and stress effects on the melting temperature of nano-polyhedral grains on a substrate*, Nanotechnology 17 (2006) 2008-2011.

    http://iopscience.iop.org/article/10.1088/0957-4484/17/8/036/pdf

61. G. Abudukelimu, **G. Guisbiers**, M. Wautelet, *Theoretical phase diagrams of nanowires*, Journal of Materials Research 21 (2006) 2829-2834.

    https://dx.doi.org/10.1557/jmr.2006.0345

62. O. Van Overschelde, S. Dinu, **G. Guisbiers**, F. Monteverde, C. Nouvellon, M. Wautelet, *Excimer laser ablation of thin titanium oxide films on glass*, Applied Surface Science 252 (2006) 4722-4727.

    https://dx.doi.org/10.1016/j.apsusc.2005.07.147

63. **G. Guisbiers**, S. Strehle, M. Wautelet, *Modeling of residual stresses in thin films deposited by electron beam evaporation*, Microelectronic Engineering 82 (2005) 665-669.

    https://dx.doi.org/10.1016/j.mee.2005.07.075

B. Proceedings

1. J. A. Garcia-Monge, C. Vazquez-Colon, A. Ayon, **G, Guisbiers**, *Synergistic photoluminescent interaction of Si and CdTe quantum dots*, 2018 Symposium on Design, Test, Integration & Packaging of MEMS and MOEMS
2. **G. Guisbiers**, M. J. Arellano-Jimenez, J. Velasquez-Salazar, M.-J. Yacaman, *Se-Te nanoalloys: a combined in-situ TEM and theoretical study*, APS Proceedings, APS March Meeting 2015 in San Antonio.
3. **G. Guisbiers**, S. Arscott, M. Gaudet, A. Belfiore, R. Snyders, *Selenium surface energy determination from size-dependent considerations*, IEEE Proceedings, IEEE-INEC 2013, Singapore.
4. **G. Guisbiers**, *Size and shape dependencies of nanomaterial properties: thermodynamic considerations*, MRS Proceedings (January 2012) Volume 1371, imrc11-1371-s1-03, XX International Materials Research Congress, Cancun, Mexico.
5. M. Coulombier, **G. Guisbiers**, M.-S. Colla, J.-R. Raskin, T. Pardoen, *Experimental evidences of competing stress relaxation mechanisms in thin Al/Si and Pd films tested on chip*, MRS Proceedings (2011) MRS Fall meeting, Boston, USA.
6. S. Palmas, A. Da Pozzo, F. Delogu, M. Mascia, A. Vacca, **G. Guisbiers**, *Photo-catalytic behaviour of self-organized TiO2 nanotubes prepared in organic electrolytes*, Proceedings of the ElecNano4 conference (2011).
7. M.-S. Colla, B. Wang, H. Idrissi, **G. Guisbiers**, D. Schryvers, J.-P. Raskin, T. Pardoen, *Mechanical properties of palladium thin films: high strength/ductility balance through growth nanotwins*, Proceedings of the ASME 2011 Applied Mechanics and Materials Conference (2011).
8. **G. Guisbiers**, S. Strehle, O. Van Overschelde, M. Wautelet, *Modeling of residual stresses in thin films deposited by electron beam evaporation*, American Institute of Physics Proceedings (2006) Volume 817, 317-324, ISBN: 0-7354-0310-4, 8th International Workshop on Stress-Induced Phenomena in Metallization, Dresden, Germany.

9. M. Wautelet, **G. Guisbiers**, *Scaling laws*, French Thermal Society Proceedings Thermic and Microtechnology, Grenoble, France, (2003) 85-92, ISBN: 2-84299-478-7.

C. Books

- **G. Guisbiers**, D. Ganguli, *Size effects in metals, alloys and inorganic compounds*, Key Engineering Materials, volume 444, Trans Tech Publications, Zurich, ISBN: 978-0-87849-265-7 (2010).
- Collective authors, *Disconcerting waves*, Editor: Don Bosco Institute Tournai, Dépôt légal: D/2002/9581/2. (2002).

D. Patents

- **G. Guisbiers**, *Stabilized selenium nanoparticle precision batch rapid production method* (2018) – US patent
- K. L. Nash, **G. Guisbiers**, H. H. Lara, *Antimicrobial Coating Comprising Chalcogenide Nano-Particles Capped by Chitosan* (2017) – US patent