Curriculum Vitae

Ahmed Touhami
Associate Professor of Physics
UTRGV

May 2020

One West University Boulevard
Brownsville, TX 78520

Phone: (956)882-6687
Fax: (956) 882-6726
Email:*ahmed.touhami@utrgv.edu*

Professional Experience

University of Texas Rio Grande Valley — 2015-present
Associate Professor, Department of Physics and Astronomy

University of Texas at San Antonio — 2009-2018
Adjunct Professor, Department of Physics and Astronomy

University of Texas at Brownsville — 2009-2015
Assistant Professor, Department of Physics and Astronomy

University of Guelph, Canada — 2006-2008
Research Associate, Department of Physics

Dalhousie University, Canada — 2003-2006
Research Associate, Department of Physics

University Catholic of Louvain-La-Neuve, Belgium — 2001-2003
Research Associate, Institute of Life Sciences

University of Monastir, Tunisia — 1994-2001
Research Assistant Professor, Department of Physics

Education

Pierre & Marie University, Paris VI, France — 1990-1994
Ph.D. with Honors in Physics:
Spin-labelling Study of Solid Surfaces Modified by Polymer Particularly Modified for the Bioseparation

Pierre & Marie University, Paris VI, France — 1988-1990
M.S. with Honors in Physics:
Study of electronic transport properties in epitaxy layers

Pierre & Marie University, Paris VI, France — June 1988
B.S. with Honors in Physics

Honors and Awards

UTRGV High Scholars Award *(3rd place, Physics)*	August 2019
UTRGV-COS Annual Research Conference *(2nd place, Physics)*	April 2018
UTRGV-COS Annual Research Conference *(3rd place, Physics)*	April 2018
UTRGV Engaged Scholar Symposium ES2 *(1st place, Physics)*	April 2018
58th Annual Regional Science & Engineering Fair *(1st place, Microbiology)*	Feb. 2018
UTRGV Engaged Scholar Symposium ES2 *(1st place, Physics)*	April 2017
UTRGV Engaged Scholar Award ($2000)	2016-2017
Annual Biomedical Research Conference for Minority Students *Tampa, (2nd place)*	Nov. 2016
2016-Gulf Coast Undergraduate Research Symposium *RICE University (Honorable)*	Oct. 2016
15th Annual Biomedical Research Conference for Minority Students *San Antonio (Achievement Award)*	Nov. 2015
Travel scholarship award *SACNAS National Diversity STEM Conference*	Oct. 2015
6th Annual PACE Bioethics Conference *UTPA, (Achievement Award)*	Oct. 2014
Tenure and Promotion, UTB, Brownsville	2015
Research recognition award, UTB, Brownsville	2014
Exceptional merit recipient, UTB, Brownsville	2011
UT System STARS PLUS Award	2009
NSERC Postdoctoral Fellowship, Dalhousie University	2003-2005
ESPCI-Paris MONITORA Scholarship	1990-1993
French Ministry of research CIFRE Award	1988-1990

Professional Development

Guest Editor, Applied Sciences *Special Issue "Advances in Single Molecule Biophysics"*	2019-Present
Scientific Committee Member *IEEE international conference on Design & Test of integrated micro & nano-Systems*	2018-Present
Member of the Material Science PhD committee *UTRGV, College of Science*	2015-Present
Member of the Biomolecular PhD committee *UTRGV, College of Science*	2016-Present
Applying the Quality Matters Rubric Workshop, UTRGV	Nov. 2016
Workshop on Inquiry Based Learning in Mathematics, UTB	July 2015
Chair of the organizing committee for 16th research symposium *UTB, Brownsville, April 4th*	2014
South Texas working group *Sponsored Research and Grants Committee*	2013-2014
Associate Editor *Open Access academic book, Versita*	2013-2014
Guest Editor, Journal of Spectroscopy	2013-2014
Professional Grant Development Workshop, Houston	Mar. 2013
Local organizing committee of APS-Texas section *UTB, Brownsville, October 10-12*	2013
NSF Joint Annual meeting workshop, Washington	June 2010
AAPT New Faculty Workshop, College Park, Maryland	Nov. 2009
Highly Qualified Personal Workshop, Ottawa, Canada	Jan. 2007
Reviewer for proposal and book chapters *Springer, NSF, NIH, DOD, NSERK (Canada*)	2009-Present

Reviewer for peer-reviewed publications including:
Applied Optics, Biophysical Chemistry, Biophysical Journal, Journal of Bacteriology, Molecular Microbiology, Nature Biotechnology, Nature Methods, Optics Letters, Physical Chemistry Chemical Physics, PNAS, Science, Soft Matter

Current and Past Teaching

"My philosophy and values related to teaching and student learning include an active learning pedagogy approach that typically engage students through discussions with classmates, posing and answering questions, and making sense of physics concepts"

Continuous Improvement of Course Materials

I enjoy designing, teaching and improving courses in order to enhance the student experience. I was involved in curriculum and course development and improvement in physics and biophysics and nanoscience at both UTB and UTRGV.

University of Texas Rio Grande Valley 2015-present
College Physics I and II, University Physics I and II,
Analysis of Biomolecules, NanoBiotechnology, Statistical Physics for Cell Biology, Structure and Function of Biological Molecules.

University of Texas at Brownsville 2009-2015
College Physics I and II, University Physics I and II,
Analysis of Biomolecules, NanoBiotechnology, Statistical Physics for Cell Biology, Physical Methods for Biological Systems, Structure and Function of Biological Molecules.

Dalhousie University, Halifax, Canada 2004-2006
Statistical Mechanics, Modern Physics

University of Louvain-La-Neuve, Belgium 2001-2002
Quantum Mechanics, AFM microscopy in Biology

University of Monastir, Tunisia 1994-2001
Quantum Mechanics, Electromagnetism, Statistical Physics,
Waves and Vibrations, Electricity, Optics, Classical Mechanics

Ecole Supérieure de Physique et Chimie Industrielle de Paris 1992-1994
Quantum Mechanics, Electricity, Optics

Student Advising

University of Texas Rio Grande Valley 2015-present
Graduate: R. Espinosa, S. Mehdi, S. Kharti, G. Grissom, H. Villar
Undergraduate: K. Salazar, R. Touhami, M. Arevalo, K. Aguirre, K. Rainey, V. Lozano, R. Luna, R. Hernandez, S. Lozano, A. Martinez, R. Espinoza, K. Cervantes, A. Olvera, C. Cosay, C. Mauricio, P. Leyva.
High school: A. Barrera, E. Gallegos, R. Touhami, J. Campos, S. Aishee.

University of Texas at Brownsville 2009-2015
Graduate: G. Grissom, J. Hu, N. Kandal, C. Gonzalez, M. Heydari
Undergraduate: H. Louni, S. Andreita, G. Grissom, J. Romo, N. Gonzalez, S. Cohen, G. Contrera, R. Luna, S. Stafford, G. Torres, R. Hernandez, S. Lozano, A. Martinez, R. Espinoza, K. Cervantes, A. Olvera, A. Hernandez, C. Cosay, C. Mauricio.
High school: J. Barrera, J. Canales.

University of Guelph, Canada 2006-2008
Graduate: S. Lu, L. Rahman
Undergraduate: W. Brownbu, S. Andrushenko, M. Lee

Dalhousie University, Canada 2003-2006
Graduate: O. Stoica
Undergraduate: A. Atkinson, M. Blokhina, R. Wang

University of Monastir, Tunisia 1994-2002
Graduate: C. Tlili, O. Ouerghi
Undergraduate: N. Lotfi, H. Aouni, A. Houari, R. Ruiz

Chairing Graduate Student Committees

Chair of the thesis committee of Shams Mehdi 2020
Physics Department, UTRGV, Master Thesis

Chair of the thesis committee of Santosh Kharti 2020
Physics Department, UTRGV, Master Thesis

Member of the thesis committee of Ujjal Lamichhane 2020
Physics Department, UTRGV, Master Thesis

Member of the thesis committee of Rakibul A. Shohan 2020
Physics Department, UTRGV, Master Thesis

Member of the thesis committee of Zuzanna Lawera 2020
Physics Department, UTRGV, Comprehensive Exam

Member of the thesis committee of Wiktoria Dolebska 2020
Physics Department, UTRGV, Comprehensive Exam

Member thesis committee of Pawan Thapaliya 2019
Physics Department, UTRGV, Master Thesis

Member of thesis committee of Christian Miranda 2019
Physics Department, UTRGV, Master Thesis

Chair of the thesis committee of Hugo Villar 2018
Physics Department, UTRGV, Master Thesis

Chair of the thesis committee of Glenn Grissom 2018
Physics Department, UTRGV, Master Thesis

Member of thesis committee of Nareg Ohannesian 2018
Physics Department, UTRGV, Master Thesis

Member of the thesis committee of Mkhitar Hobosyan 2018
Physics Department, UTRGV, PhD Thesis

Member of the thesis committee of Chamath Dannangoda 2018
Physics Department, UTRGV, PhD Thesis

Member of thesis committee of Srbuhi Yolchinyan 2017
Physics Department, UTRGV, Master Thesis

Member of thesis committee of Ramin Salimi 2017
Physics Department, UTRGV, PhD Thesis

Member of thesis committee of Alexandro Trevino 2017
Physics Department, UTRGV, PhD Thesis

Member of thesis committee of Ivan Davila 2017
Physics Department, UTRGV, PhD Thesis

Member of the thesis committee of Jaime Romo 2016
Physics Department, UTRGV, Master Thesis

Chair of the thesis committee of Nabin Kandal 2014
Physics Department, UTB, Master Thesis

Chair of the thesis committee of Carlos Gonzalez 2013
Physics Department, UTB, Master Thesis

Chair of the thesis committee of Meysam Heydari 2013
Physics Department, UTB, Master Thesis

Member of the thesis committee of Zamarta Ramazanova 2013
Physics Department, UTB, Master Thesis

Member of the thesis committee of Mkhitar Hobosyan 2012
Physics Department, UTB, Master Thesis

Chair of the thesis committee of Jie Hu 2012
Physics Department, UTB, Master Thesis

Society Membership

Biophysical Society	2016-Present
America Physical Society	2006-Present
American Society for Microbiology	2007-Present
American Society for Nanomedicine	2012-2017

Scientific Grants

Unraveling the Molecular Architecture of Bacterial Cell Wall Peptidoglycan (UTRGV, College of Science, Seed Fund: $13,500, PI)	2016
Acquisition of an Electronic Microscope for Research and Education (DOD: $433,500, CoPI)	2014
UTB-HEAF grant (UTB: $58,000, PI)	2014
MRI: Acquisition of an integrated Fluorescence and Atomic Force (NSF: $271,233, PI)	2013
Nanotechnology Undergraduate Education in Engineering (NSF: 478,000, Senior Personnel)	2011
Research Education for Undergraduate (NSF: $200,000, CoPI).	2011
RIMI: Biomedical UTB (NIH: $1,385,562, Senior Personnel)	2010
STAR-Plus Award (UT-System: $224,000, PI)	2009
Adaptive Coating and MEMS (DOD: $475,000, CoPI)	2009

Visiting Scientist Positions

High Institute for Applied Sciences and technology, Tunisia	July 2012
Claude Bernard University, Lyon, France	July 2010
Ecole Centrale de Lyon, France	July 2009
University Catholic of Louvain	June-July 2005

Organization of Conferences and Workshops

Session Chairman, UTRGV-COS Annual Symposium	2019
Session Chairman of the 4th NANOSMAT-USA conference	2018
Session Chairman, UTRGV-COS Annual Symposium	2018
Session Chairman, UTRGV-COS Annual Symposium	2017
Chair of the 16th Annual UTB Research Symposium	2014
Session Chairman of the 2nd NANOSMAT-USA conference	2014
Member of the organizing committee of APS-Texas section	2013
Member of the organizing committee of MADICA-Tunisia	2012

Chair of the APS-Texas section, San Antonio	2010
Chair of the Nanomaterials and Renewable Energies Conference, Morocco	2010
Chair of the Single Molecule Spectroscopy Workshop, Canada	2007
Member of the organizing committee of Biophysics Workshop, Canada	2006

Invited Research Talks

Faculty of Science and Technology Tangier — Jan. 2020
Biofilm Mechanics, Jan. 6, Tangier, Morocco

Faculty of Science and Technology Tangier — Jan. 2019
Biomedical Applications of Chitosan, Jan. 8, Tangier, Morocco

4th NANOSMAT-USA Conference — Oct. 2018
Oct. 29-Nov.1, South Padre Islands, Texas, USA.

Thematic Scholarly Community Meetings — Oct. 2014
FALL 2014 New Materials Seminar, Edinburg, USA

Biosensors and Bioelectronics — Aug. 2014
3rd International Conference and Exhibition, San Antonio, USA

2th NANOSMAT-USA Conference — May 2014
International Conference on Nanostructured Materials, Houston, USA

University of Texas at Austin — Feb. 2014
Physics Seminar Series, Austin, USA

Trinity University at San Antonio — Feb. 2014
Physics Seminar Series, San Antonio, USA

Translational Research Seminar Series, UTB — May 2014
Biomedical Department, UTB, USA

Microscopy Seminar Series, UTB — Apr. 2013
Biomedical Department, UTB, USA

8th Maghreb-Europe Conference, MADICA — Nov. 2012
Materials and Applications in Biocaptors, Sousse, Tunisia

Nano-Materials and Renewable Energies — July 2010
International Conference, Safi, Morocco

Montana State University — June 2007
Bacterial Biofilm Workshop, Bozeman, USA

University of Toronto — Apr. 2007
Single Molecule Spectroscopy Workshop, Toronto, Canada

University of Guelph — Sept. 2006

Physics Seminar Series, Guelph, Canada

University of Montreal June 2005
Nanotechnology Forum, Montreal, Canada

Major Research Interests

Physics of soft materials; surfaces and interfaces; biomaterials and biopolymers; polymer physics; DNA-protein interactions; bacterial biophysics; proteins and peptides; biopolymer; nanoparticles; thin film instabilities; self- assembly and pattern formation.

Atomic force microscopy; Optical and Fluorescence Microscopy; Optical Tweezers; Electron Paramagnetic Resonance; Nuclear magnetic resonance; ellipsometry; surface plasmon resonance; infrared spectroscopy, microbalance; contact angle.

Publications

According to Google scholar, as of May 2020: My publications have received a total of 2279 citations. My H-index is 22.
Hoang, P., Aishee, S., Grissom, G., Touhami, A., Moore, H., & Uddin, M. (2017). Synthesis of low energy sensitive hybrid photovoltaic cells using carbon nanotubes: A 3D application device. MRS Advances, 2(14), 791-798. doi:10.1557/adv.2017.151

Books

1. A. Touhami. Atomic Force Microscopy: A New Look at Microbes. MORGAN & CLAYPOOL PUBLISHERS. May, 2020, https://www.morganclaypool.com, *Under print*.

Book Chapters

2. A. Touhami. NANOMEDICINE, One Central Press, London, 2014, Chapter 17: Biosensors & Nano-Biosensors: Design and Applications.

Peer Reviewed Journals Articles

1. S. Hernandez, LV. Colom, M. Perez-Cordova, A. Touhami, O. N, LA Mendoza, G. Perry, LF. Pacheco-Otalora. Oligomeric $A\beta_{1-42}$ Intraseptal injections induce oxidative stress and injuremedial septal neurons in rats. Accepted in *PLOS ONE* (2020).
2. I. Hussain, AR Chowdhury, J. Jaksik, G. Grissom, A. Touhami, EE. Ibrahim, M. Schauer, O. Okoli, MJ. Uddin. Conductive glass free carbon nanotube micro yarn-based perovskite solar cells. *Applied Surface Science*. 478, 327-333 (2019).
3. M. Uddin, A. Touhami, A. Ly, D. Ortiz, E. Durke, I. Martinez, J. Jaksik, J. Moore, M. Cua, M. McEntee, P. Tran, S. Aishee, V. Galvez. Advanced cotton

fibers exhibit efficient photo-catalytic self-cleaning and antimicrobial activity. *Journal of Photochemistry & Photobiology, A: Chemistry*. 365, 77-85 (2018).
4. G. Grissom, J. Jaksik, M. McEntee, EM. Durke, STJ. Aishee, M. Cua, O. Okoli, A. Touhami, HJ. Moorea, MJ. Uddin. Three-dimensional carbon nanotube yarn based solid state solar cells with multiple sensitizers exhibit high energy conversion efficiency. *Solar Energy* 171, 16–22 (2018).
5. K. Kovach, MD. Fields, Y. Irie, K. Jain, S. Doorwar, K. Vuong, N. Dhamani, K. Mohanty, A. Touhami, and VD. Gordon. Evolutionary adaptations of biofilms infecting cystic fibrosis lungs promote mechanical toughness by adjusting polysaccharide production. *npj Biofilms and Microbiomes*. 3, 1-9 (2017) doi:10.1038/s41522-016-0007-9.
6. CA. Rodesney, B. Roman, N. Dhamani, BJ. Cooley, A. Touhami, and VD. Gordon. Mechanosensing of shear by Pseudomonas aeruginosa leads to increased levels of the cyclic di-GMP signal initiating biofilm development. *Proc. Natl. Acad. Sci. USA*. 114, 7563–7568 (2017) doi:10.1073/pnas.1703255114.
7. Phong Tran Hoang, Sayeeda T.J. Aishee, G. Grissom, A. Touhami, H J. Moore and MJ. Uddin. Synthesis of low energy sensitive hybrid photovoltaic cells using carbon nanotubes: A 3D application device. *Nanomaterials*. 2, 791-798 (2017). doi: https://doi.org/10.1557/adv.2017.151
8. MJ. Uddin, G. Grissom, M. Leal, V. Galvez, T. Trad, A. Touhami, N. Islam, J. Parsons and HJ. Moore. Self-Aligned Carbon Nanotube Yarns for Multifunctional Optoelectronic Applications. Paper No. IMECE2016-67441, pp. V010T13A032, (2016). 5 pages doi:10.1115/IMECE2016-67441
9. MT. Castaneda, ED. Lopez, A. Touhami, R. Tovar, MR. Ortega, and JM. Rodriguez. Neuroprotection of medial septal cholinergic neurons by memantine after intralateral septal injection of Aβ1-40. *Neuroreport*. 26, 450 (2015).
10. KS. Martirosyan, MM. Bouniaev, M. Rachmanov, A. Touhami, N. Islam, D. Askari, T. Trad, D. Litvinov, SE. Lyshevski. An integrated multidisciplinary nanoscience concentration certificate program for STEM education. *Journal of Nano Education*. 5, 1-10 (2013).
11. BJ. Cooley, TW. Thatcher, SM. Hashmi, G. L'Her, HH. Le, DA. Hurwitz, D. Provenzano, A. Touhami, and VD. Gordon. The extracellular polysaccharide Pel makes the attachment of P. aeruginosa to glass surfaces symmetric and short-ranged. *Soft Matter*. 9, 3871-3876 (2013).
12. J. Durán-González, ED. Michi, B. Elorza, MG. Perez-Córdova, LF. Pacheco-Otalora, A. Touhami, G. Perry, IV. Murray, and LV. Colom. Amyloid peptides modify the expression of antioxidant repair enzymes and a potassium channel in the septohippocampal system. *Neurobiol Aging*. 34, 2071-2076 (2013).
13. LV. Colom, MT. Castaneda, D. Aleman, and A. Touhami. Memantine protects cholinergic and glutamatergic septal neurons from A 1-40 induced toxicity. *Neurosci Lett*. 541, 54-57 (2013).

14. J. Hu, V. Gordon, and A. Touhami. Real-Time Interaction between Antimicrobial Peptide and Lipid Membrane Using Atomic Force Microscopy and Confocal Microscopy. *MRS Proceedings*. (2012).
15. LV. Colom, MT. Castaneda, S. Hernandez, G. Perry, S. Jaime, and A. Touhami. Intrahippocampal Amyloid-ß (1-40) Injections Injure Medial Septal Neurons in Rats. *Current Alzheimer Research*. 8, 832-840 (2011).
16. A. Touhami, M. Alexander, MK. Gram, M. Corredig, and JR. Dutcher. Probing protein conformations at the oil droplet–water interface using single-molecule force spectroscopy. *Soft Matter*. 7, 10274–10284 (2011).
17. A. Touhami, M. Alexander, M. Corredig, and J. Dutcher. Conformation of Beta-Lactoglobulin at an Oil/Water Interface as Determined from Single-Molecule Force Spectroscopy. *Biophysical Journal*. 96, 585a (2009).
18. S. Lu, A. Touhami, H. Harvey, E. Scheurwater, L. Burrows, and JR. Dutcher. Mechanical Properties of Type IV Pili in Pseudomonas Aeruginosa. *Biophysical Journal*. 96, 641a (2009).
19. A Touhami, M. Jericho, V. Matias, A. Clarke, T. Beveridge, and JR. Dutcher. Bacterial Cell Wall Peptidoglycan at Single Molecule Resolution. *Biophysical Journal*. 96, 523a (2009).
20. BP. Downing, AD. Rutenberg, A. Touhami, and M. Jericho. Subcellular Min Oscillations as a Single-Cell Reporter of the Action of Polycations, Protamine, and Gentamicin on Escherichia coli. PLoS ONE, 4, e7285 (2009).
21. A. Touhami, and JR. Dutcher. pH induced changes in adsorbed ß-lactoglobulin molecules measured using atomic force microscopy. *Soft Matter*. 5, 220-227 (2009) (*Invited paper*).
22. A. Touhami, M. Alexander, M. Corredig, and J. Dutcher. Probing Protein Conformations at the Oil-water Interface Using Single-Molecule Force Spectroscopy. *Biophysical Journal*. 94, 843 (2008).
23. JM. Boyd, A. Dacanay, LC. Knickle, A. Touhami, LL. Brown, MH. Jericho, SC. Johnson, and M. Reith. Contribution of Type IV Pili to the Virulence of Aeromonas salmonicida subsp salmonicida in Atlantic Salmon. *Infection and Immunity*. 76, 1445-1455 (2008).
24. G P. Rockwell, A. Timmons, A. Touhami and JR. Dahn. Natural variability in the surface roughness of combinatorial libraries of materials. *Applied Surface Science*. 253, 5943-5946 (2007).
25. A. Touhami, MH. Jericho, and TJ. Beveridge. *Molecular recognition forces between immunoglobulin G and surface protein adhesins on living staphylococcus aureus*. *Langmuir*. 23, 2755-2760 (2007).
26. JA. Corcoran, J. Salsman, R. de Antueno, A. Touhami, MH. Jericho, EK. Clancy, and R. Duncan. The p14 fusion-associated small transmembrane (FAST) protein effects membrane fusion from a subset of membrane microdomains. *J. Biol. Chem*. 281, 31778-31789 (2006).
27. A. Touhami, MH. Jericho, and AD. Rutenberg. Temperature Dependence of MinD oscillation in Escherichia coli: Running Hot and Fast. *J. Bacteriology*. 188, 7661-7667 (2006).

28. A. Touhami, MH. Jericho, JM. Boyd, and TJ. Beveridge. Nanoscale characterization and determination of adhesion forces of Pseudomonas aeruginosa pili by using atomic force microscopy. *J. Bacteriology*. 188, 370-377 (2006).
29. D. Top, R. deAntueno, J. Salsman, J. Corcoran, J. Mader, D. Hoskin, A. Touhami, MH. Jericho, and R. Duncan. Liposome Reconstitution of a Minimal Protein- Mediated Membrane Fusion Machine. *EMBO Journal*. 24, 2980-2988 (2005).
30. A. Touhami, MH. Jericho, and TJ. Beveridge. Atomic Force Microscopy of Cell Growth and Division in Staphylococcus aureus. *J. Bacteriology*. 186, 3286 3295 (2004), *Selected for the American Society for Microbiology News, July 2004*.
31. O. Ouerghi, A. Touhami, N. Jaffrezic-Renault, C. Martelet, H. Ben Ouada, and S. Cosnier. Electrodeposited Biotinylated Polypyrrole as an immobilization method for Impedimetric Immunosensors. *IEEE Sensors Journal*. 4, 559-567 (2004).
32. A. Touhami, B. Hoffmann, A. Vasella, FA. Denis, and YF. Dufrêne. Aggregation of Microbial Cells: Direct Measurement of Discrete Lectin-Carbohydrate Interactions. *Microbiology*.149, 2873-2878 (2003).
33. A. Touhami, B. Nysten, and YF. Dufrêne. Nanoscale mapping of the elasticity of microbial cells by atomic force microscopy. *Langmuir*. 19, 4539-4543, (2003) (*Invited paper*).
34. A. Touhami, B. Hoffmann, A. Vasella, FA. Denis, and YF. Dufrêne. Probing specific lectin-carbohydrate interactions using atomic force microscopy imaging and force measurements. *Langmuir*. 19,1745-1751 (2003) (*Invited paper*).
35. F. Ahimou, A. Touhami, and YF. Dufrêne. Real-time imaging of the surface topography of living yeast cells by atomic force microscopy. *Yeast*. 20, 25-30 (2003).
36. F. Ahimou, FA. Denis, A. Touhami, and YF. Dufrêne. Probing microbial cell surface charges by atomic force microscopy. *Langmuir*. 18, 9937-9941 (2002), *Selected for the Analytical Currents News, February 2003*.
37. O. Ouerghi, A. Touhami, N. Jaffrezic-Renault, C. Martelet, H. Ben Ouada, and S. Cosnier. Impedimetric immunosensor using avidin-biotin for antibody immobilization. *Bioelectrochemistry*. 56, 131-133 (2002)
38. O. Ouerghi, A. Touhami, A. Othmane, H. Ben Ouada, C. Martelet, C. Fretigny, and N. Jaffrezic-Renault. Investigating antibody-antigen binding with atomic force microscopy. *Sensors and Actuators B*. 84,167-175 (2002).
39. T. Benameur, A. Touhami, and AR. Yavari. On the atomic force microscopy characterization of some Zr-based metallic glasses: Anomalous electrostatic behavior. *Journal of Metastable and Nanocrystalline Materials*. 43, 559-564 (2002).
40. A. Touhami, A. Othmane, O. Ouerghi, H. Ben Ouada, C. Fretigny, and N. Jaffrezic- Renault. Red blood cells imaging and antigen-antibody interaction measurement. *Biomolecular Engineering*. 2-6,183-188 (2002).

41. O. Ouerghi, A. Touhami, A. Othmane, H. Ben Ouada, C. Martelet, C. Fretigny, and N. Jaffrezic-Renault. Investigating antibody-antigen binding with atomic force microscopy. *Biomolecular Engineering*. 2-6:189-193 (2002).
42. Halidou, T. Boufaden, A. Touhami, A. Rebey, and B. El Jani. Annealing effect on GaN buffer layer surface. *Phys. Stat. Sol. (a).* 184, 236-271 (2001).
43. R. Mlika, M. Gamoudi, G. Guillaud, M. Charbonnier, M. Romand, J. Davenas, N. Jaffrezic-Renault, R. Lamartine, and A. Touhami. Calix[4]arene sensitive thin films for detecting sodium. *Materials Science and Engineering C.* 11, 129-136 (2000).
44. T. Benameur, A. Touhami, and AR. Yavari. Atomic Force Microscopy Studies on Duplex Microstructures of Nanocrystalline-Amorphous in Zr-Based Metallic Glass. *Journal of Metastable and Nanocrystalline Materials*. 8, 159-166 (2000).
45. Davenas, R. Mlika, H. Baouab, A. Touhami, and M. Gamoudi. Rutherford backscattering spectrometry investigations of chemical sensors for the detection of metals: application to calixarene and functionalized cottons. *Sensors and Actuators B*. 59, 220-224 (1999).
46. M. Ben Ali, H. Ben Ouada, A. Touhami, H. Sfihi, and AP. Legrand. A cyclodextrin EIS sensitive membranes: Application to heavy ions sensors. *Electrochem. Soc. Proc*. 97, 779 (1997).
47. A. Touhami, H. Hommel, A P. Legrand, A Serres, D. Muller, and J. Jozefonvicz. Spin-labelling study of dextran-coated silica: effect of functionalization. *Colloids and Surfaces B*. 1, 189-195 (1997).
48. A. Touhami, H. Hommel, A. P. Legrand, MP. Vivarat-Perrin, and B. Sebille. Spin- labelling study of silica modified by copolymer of vinylpyrrolidone and vinyl chloroformate. *Colloids and Surfaces A*. 72, 55-62 (1996).
49. H. Hommel, A. Halli, A. Touhami, and A P. Legrand. From isolated coils to brushes of poly (ethylene oxide) grafted on silica: a spin-labelling study. *Colloids and Surfaces A*. 111, 67-74 (1995).
50. A. Touhami, H. Hommel, AP. Legrand, A. Serres, D. Muller, and J. Jozefonvicz. Spin- labelling study of dextran-coated silica: Effect of cross-linking. *Colloids and Surfaces A*. 75, 57-64 (1993).
51. H. Hommel, A. Touhami, A. Halli, and AP. Legrand. Thickness of a silica-Tethered Poly-Ethylene Oxide Layer Measured by Spin Labelling. *Journal of Polymer Science B*. 33, 2189-2198 (1993).
52. H. Hommel, A. Touhami, and AP. Legrand. Segmental mobility of model compounds for rubber reinforcement. *Makromol. Chem*. 194, 879-889 (1993).

Conference proceedings & Posters

1. SAH. Peyal, J. Valladares, A. Touhami, HF. Huq. Comparison of Two Synthesis Methods to Deposit Silicon Nitride (Si_3N_4) thin films., 62nd SVC Annual Technical Conference VAT Worldwide in Long Beach, April 27, 2019, California, USA.

2. S. Khatri, S. Mehdi, A. Touhami. Effects of Nanosized Glass Beads on The Formation of Amyloid Fibers, COS-Annual Research Conference, March 29, 2019, UTRGV-Edinburg.
3. M. Arevalo, S. Mehdi, A. Touhami. Synthesis of Chitosan Nanoshells for Drug Delivery, COS-Annual Research Conference, March 29, 2019, UTRGV-Edinburg.
4. S. Mehdi, A. Touhami. Quantifying Intra-and Inter-Species Bacterial Cell Interactions to Understand the Mechanisms of Biofilms Formation Using Atomic Force Microscopy, COS-Annual Research Conference, March 29, 2019, UTRGV-Edinburg.
5. A. Touhami, Lee. T. Randall, J. Moore. Effects of Terminal Group Chemistry on the Nanomechanical and Structural Properties of Self-Assembled Monolayers on Gold Generated from Alkanethiols, 4th NANOSMAT-USA Conference, South Padre Islands, Oct. 29-Nov.1, 2018, Texas, USA.
6. JH. Moore, RT. Lee, F. Gozuacik, A. Touhami. Effects of Terminal Group Chemistry on the Nanomechanical and Structural Properties of Self-Assembled Monolayers on Gold Generated from Alkanethiols. 62nd Biophysical Annual Meeting, February 17-21, 2018, San Francisco, USA.
7. H. Villar, A. Touhami. Probing Mechanical Properties of ß-lactoglobulin Fibers Using Atomic Force Microscopy. ARC2018 (College of Science Annual Research Conference UTRGV), April 13, 2018, Edinburg, USA
8. P. Leyva, A. Touhami. Glutaraldehyde-Chitosan Hydrogels Characterized and Fabricated for Biomedical Improvement. ARC2018 (College of Science Annual Research Conference UTRGV), April 13, 2018, Edinburg, USA.
9. R. Touhami, A. Touhami. How does Growth Temperature Impact Bacterial Adhesion and Nano-mechanics? ARC2018 (College of Science Annual Research Conference UTRGV), April 13, 2018, Edinburg, USA.
10. K. Cervantes, A. Touhami. Nanostructural and Nanomechanical Properties of Pseudomonas aeruginosa Pili. ARC2018 (College of Science Annual Research Conference UTRGV), April 13, 2018, Edinburg, USA.
11. K. Cervantes, A. Touhami. Nanostructural and Nanomechanical Properties of Pseudomonas aeruginosa Pili. Annual Biomedical Research Conference for Minority Students, November 1-4, 2018, Phoenix, Arizona, USA.
12. P. Leyva, A. Touhami. Fabrication of Glutaraldehyde-Chitosan Hydrogels for Biomedical Applications. Annual Biomedical Research Conference for Minority Students, November 1-4, 2018, Phoenix, Arizona, USA.
13. R. Luna, A. Touhami. Effect of Temperature and pH on the Nanostructural and Nanomechanical Properties of Chitosan Films, Engaged Symposium 2017, UTRGV, April 18, 2017, Brownsville, USA.
14. A. Touhami. Glycan Length Distribution and Peptidoglycan Architecture in Escherichia Coli. College of Sciences Annual Conference. March 31, 2017, Edinburg, USA.

15. R. Luna, A. Touhami. Effect of Temperature and pH on the Nanostructural and Nanomechanical Properties of Chitosan Films, Conference for Undergraduate Women in Physics, RICE University, January 14, 2017, Houston, USA.
16. R. Luna, A. Touhami. Effect of pH and Temperature on the Nanostructural and Nanomechanical Properties of Chitosan Films, Annual Biomedical Research Conference for Minority Students, November 10, 2016, Tampa, USA.
17. R. Luna, and A. Touhami. Effect of Temperature and pH on the Nanostructural and Nanomechanical Properties of Chitosan Films. *Golf Coast Undergraduate Research Symposium*. RICE University, October 22, 2016, Houston, USA.
18. R. Luna, A. Touhami. Effect of pH and Temperature on the Nanostructural and Nanomechanical Properties of Chitosan Films, Society for Advancement of Chicanos/Hispanics and Native Americans in Science, October 13, 2016, Long Beach, USA.
19. A. Touhami, HJ. Moore, and TR. Lee. Investigation of Molecular Interactions between AFM-Tip and Thiol Films. *APS March meeting*. March 14–18, 2016; Baltimore, USA.
20. R. Luna, and A. Touhami. The Effects of pH and Temperature on the Nanostructure of Chitosan Films. *APS March meeting*. March 14–18, 2016; Baltimore, USA.
21. HJ. Moore, M. Leal, G. Grissom, T. Trad, N. Islam, A. Touhami, and MJ. Uddin. Dye-Sensitized Carbon Nano-Yarn Based Photovoltaic Cells with Enhanced Electron-Hole Separation and Barrier Characteristics. *APS March meeting*. March 14–18, 2016; Baltimore, USA.
22. G. Grissom, M. Leal, MJ. Uddin, and A. Touhami. Dye-Sensitized Photovoltaic Cells with Enhanced Exciton-Hole Separation and Barrier Characteristics. *The 251st ACS National Meeting, San Diego*. March 13-17, 2016, California, USA.
23. R. Luna, A. Touhami. Synthetization and Characterization of Chitosan Films and Gels. *The 15th Annual Biomedical Research Conference for Minority Students (ABRCMS), Seattle*. November 11-14th, 2015, Washington, USA. (*winner of first price*)
24. G. Grissom, M. Leal, M. Uddin, A. Touhami. Dye-Sensitized Photovoltaic Cells with Enhanced Exciton-Hole Separation and Barrier. APS Texas Section Meeting. October 29–31, 2015; Waco, USA.
25. M. Leal, G. Grissom, T. Trad, E. Heise, A. Touhami, J. Uddin, and J. Moore. 3-Dimensional (3D) Photovoltaic (PV) Cells with Fast Electron Generation and Transmission Capability: A Paradigm Shift in Renewable Energy.
26. R. Parg, A. Touhami, and J. Dutcher. Nanomechanical Response of Bacterial Cells to Antimicrobial Peptides. *APS March Meeting*. March 2-6, 2015, San Antonio, USA.
27. M. J. Uddin, D. Daramola, H. J. Moore, G. Grissom, A. Touhami, E. Heise and O. I. Okoli. Development of 3D Photovoltaic Neuron System: A Hybrid Cell with Energy Sensitive Phenomena. *CBD S&T Conference*. May 12-14, 2015, St. Louis, USA.

28. A. Touhami, M. Alexander, M. Corredig, and J. Dutcher. Investigating Protein Conformation Changes at a Soft Surface. *APS Fall Meeting Texas section*. October 10-12, 2013, Brownsville, USA.
29. CJ. Gonzalez, A. Touhami. Probing Conformational Changes in DNA by Force-Induced Melting of Double-Stranded DNA. *APS Fall Meeting Texas section*. October 10-12, 2013, Brownsville, USA.
30. VD. Gordon, BJ. Cooley, TW. Thatcher, SM. Hashmi, G. L'Her, HH. Le, DA. Hurwitz, D. Provenzano, and A. Touhami. Can single-cell behavior predict the structure and rheology of bacterial biolms? *APS Fall Meeting Texas section*. October 10-12, 2013, Brownsville, USA.
31. N. kandel, and A. Touhami. Thermodynamics and kinetics of single stranded DNA (ss-DNA) binding proteins. *APS Fall Meeting Texas section*. October 10-12, 2013, Brownsville, USA.
32. J. Hu, V. Gordon, and A. Touhami. Real-Time Interaction between Antimicrobial Peptide and Lipid Membrane Using Atomic Force Microscopy and Confocal Microscopy. *MRS Fall meeting*. November 25-30, 2012, Boston, USA.
33. A. Touhami, V. Matias, A. Clarke, MH. Jericho, T. Beveridge, and J. Dutcher. Atomic Force Microscopy Measurements of High Resolution Structure of Bacterial Cell Sacculi. *MRS Fall meeting*. November 25-30, 2012, Boston, USA.
34. A. Touhami, and MH. Jericho. Atomic Force Microscope Imaging of the Peptidoglycan Cell Wall of Bacillus Subtilis. *NANOSMAT-USA*. March 27-30, 2012, Tampa, Florida, USA.
35. MH. Gharahcheshmeh, and A. Touhami. Effect of pulse current parameters on the surface morphology and chemical composition of Zn-Co alloy coatings. *NANOSMAT-USA*, March 27-30, 2012, Tampa, Florida, USA.
36. MH. Gharahcheshmeh, and A. Touhami. Surface morphology and phase distribution of Zn and Zn-Co alloy coatings, obtained by direct current. *TMS 2012*, March 11-15, 2012, Orlando, Florida, USA.
37. MH. Gharahcheshmeh, and A. Touhami. Morphology and chemical composition of Zn-Co alloy electrodeposits from alkaline solutions. *APS Fall Meeting Texas section*. October 6-8, 2011, Brownsville, USA.
38. J. Hu, V. Gordon, and A. Touhami. Real-Time Interaction between Antimicrobial Peptide and Lipid Membrane Using Atomic Force Microscopy and Confocal Microscopy. *APS Fall Meeting Texas section*. October 6-8, 2011, Brownsville, USA.
39. A. Touhami, and JR. Dutcher. High-resolution Architecture of Gram-negative Bacterial Cell Wall. *APS Fall Meeting Texas section*. October 6-8, 2011, Brownsville, USA.
40. AI. Brown, RA. Wickham, JR. Dutcher, and A. Touhami. Relationship between model bacterial peptidoglycan network structures and AFM force-distance curves. *Laurier Centennial: International Conference on Applied Mathematics, Modeling & Computational Science*. July 25-29, 2011, Waterloo, Canada.
41. A. Touhami, M. Alexander, and M. Corredig. Probing-Protein Conformation Changes in Food Nanostructure. *International Conference on Nano-Materials and Renewable Energies*. July 5-8, 2010, Safi, Morocco.

42. A. Touhami, V. Matias, A. Clarke, M. Jericho, T. Beveridge, and JR. Dutcher. Atomic Force Microscopy Measurements of High Resolution Structure of Bacterial Cell Sacculi. *MRS Spring Meeting*. April 5-9, 2010, USA
43. E. Brown, R. Wickham, A. Touhami, and JR. Dutcher. Relationship between model bacterial peptidoglycan network structures and AFM force-distance curves. *APS March Meeting*. March 15-19, 2010. USA
44. A. Touhami, V. Matias, A. Clarke, M. Jericho, T. Beveridge, and J. Dutcher. New insights into the bacterial cell wall peptidoglycan architecture. *APS March Meeting*. March 16-20, 2009. USA
45. A. Touhami, TJ. Beveridge, and John Dutcher. Bacterial Cell Wall Peptidoglycan at Single Molecule Resolution. *APS March Meeting*. March 16-20, 2009, USA
46. A. Touhami, M. Alexander, M. Corredig, and JR. Dutcher. Probing-Protein Conformations at the Oil-water Interface Using Single-Molecule Force Spectroscopy. *53rd Annual Meeting of the Biophysical Society*. February 28 March 4, 2009. USA
47. JR. Dutcher, A. Touhami, V. Matias, A. Clarke, M. Jericho, and T. Beveridge. High resolution structure of bacterial cell sacculi. *APS March Meeting*. March 10-14, 2008. USA
48. A. Touhami, TJ. Beveridge, and JR. Dutcher. Force Spectroscopy of Individual Bacterial Adhesins. *Chemical Biophysics Symposium*. April, 20-22, 2007, Toronto, Canada.
49. A. Touhami, JR. Dutcher, MH. Jericho, and TJ. Beveridge. Nanoscale Probing of Bacterial Adhesion Using Force Spectroscopy Techniques. *4th ASM Conference on Biofilms*. March 25–29, 2007, Quebec City, Canada
50. RJ. De Antueno, A. Touhami, S. Lee, J. Shou, and R. Duncan. A Combinatorial Approach to Vaccine Delivery Using a Targeted Fusogenic Liposome Delivery System. *CSM Annual Conference.*, June 12-15, 2005. Halifax, Canada.
51. A. Touhami, MH. Jericho, and YF. Dufrêne. Aggregation of Microbial Cells: Direct Measurement of Discrete Lectin-Carbohydrate Interactions. *CAP Congress*. June 8-11, 2003. Canada.
52. A. Touhami, O. Ouerghi, N. Jafferizic-Renault, C. Martelet, H. Ben Ouada, and S. Cosnier. Impedimetric immunosensor using avidin-biotin for antibody immobilization. *XVIth International Symposium on Bioelectrochemistry and Bioenergetics.* June 1-6, 2001, Bratislava, Poland.
53. O. Ouerghi, A. Touhami, A. Othmane, H. Ben Ouada, C. Martelet, C. Fretigny, and N. Jafferizic-Renault. Investigating specific antigen/antibody binding with the atomic force microscope. E-*MRS Spring Meeting, Symposium: Cell- Biosystem Material Interactions.* June 5-8, 2001, Strasbourg, France.
54. C. Dridi, J. Davenas, A. Touhami, H. Ben Ouada, H. Mâaref, and JJ. André. Relationship between structural and spectroscopic properties of poly(meta/paraphenylene). MRS Fall Meeting, November 29-December 03, 1999, Boston, USA.
55. A. Touhami, R. Mlika, H. Ben ouada, J. Davenas, and M. Gamoudi. Etude de membranes calixaréniques par imagerie AFM et spectroscopie RBS. *6eme*

Colloque National de Recherche en Physique, March 19-21, 1999, Hammamet, Tunisia.

56. A. Touhami, M. Provence, J.M. Chovelon, N. Jaffrezic-Renault, H. Benouada, and H. Maaref. Caractérisation de films mixtes de Langmuir Blodgett par spectroscopie infrarouge et microscopie de force atomique. *6eme Colloque National de Recherche en Physique*, March 19-21, 1999, Hammamet, Tunisia.
57. O. Ouerghi, A. Touhami, M.B. Rammah, A. Othmane, C. Fretigny, S. Elqebbaj, and L. Roubi. Morphologies et interactions des biomolécules par microscopie à force atomique. *6eme Colloque National de Recherche en Physique*. March 19-21, 1999, Hammamet, Tunisia.
58. J. Davenas, R. Mlika, H. Baouab, A. Touhami, and M. Gamoudi. Rutherford backscattering spectrometry investigations of chemical sensors for the detection of metals: application to calixarene and functionalized cottons. *The Procceding of the POLCAP 98 (Sensors and Actuators)*, December 7-9, 1998, France.
59. A. Touhami, S. El qebbaj, L. Roubi, R. Mlika, H. Ben Ouada, and M.B. Rammah. Etude de la structure des films de calixarène par Microscopie à Force Atomique. *Congrès 'MADICA-98*, November 9-11, 1998, Monastir, Tunisia.
60. A. Touhami, A. Othmane, C. Fretigny, S. El qebbaj, L. Roubi, H. Ben Ouada, and M.B. Rammah. Interaction et adhésion entre surfaces par Microscopie Force Atomique (AFM). Congrès 'MADICA-98. November 9-11, 1998, Monastir, Tunisia.
61. A. Touhami, H. Ben Ouada, S. Ameur, M. B. Rammah, C. Fretigny. and A. P. Legrand. Direct measurement of adhesion forces between immunoglobulin complex with the atomic force microscope. *First International Conference on Inorganic Materials Synthesis, Characterisation, Properties and Applications of Inorganic Materials*, September 16-19, 1998, Paris, France.
62. A. Touhami, H. Ben Ouada, S. Ameur, M.B. Rammah, C. Fretigny, and A.P. Legrang. Immunoglobulines, Cellules biologiques et Calixarènes par Microscopie à Force Atomique. *Congrès: Matière Molle et Microscopie de Forces*. October 5-8, 1997, Gujan-Mestras, France.
63. A. Touhami, H. Hommel, A.P. Legrand, A. Serres, D. Muller, and J. Jozefonvicz. Silice enrobée par du dextrane réticulé et fonctionnalisé pour chromatographie d''exclusion stérique en milieu aqueux. Caractérisation par RPE. *Congrès de la Société Française de Physique,* July 7-10, 1997, Paris, France.
64. Muller, A. Serres, A. Touhami, N. Nurdin, H Hommel, A.P. Legrand, P. Descouts, and J Jozefonvicz. Caractérisation de surfaces de silices passivées et fonctionnalisées par la p-aminobenzamidine Affinité des serine-protéases. *Biocatalyse*, May 3-6, 1993, Aussois, USA.
65. A. Touhami, H. Hommel, A.P. Legrand, A. Serres, D. Muller, and J. Jozefonvicz. Silica coated with dextrane in aqueous medium, study by spin-labelling. *VII International Symposium on Magnetic Resonance in Colloid and Interface Science*. September 11–15, 1995, Madrid, Spain
66. A. Touhami, H. Hommel, A.P. Legrand, M.P. Vivarat-Perrin, B. Sebille, "Silica modified with copolymers of vinylpyrrolidone and chloroformiate studied by EPR",

VII International Symposium on Magnetic Resonance in Colloid and Interface Science, Madrid, September 11–15, 1995, Spain