EMILIO I. ALARCON
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EDUCATION

2009/10 – 2011/9	Post-doctorate, Postdoctoral Fellow, Nanomaterials, University of Ottawa
2006/7 – 2009/9	Ph.D., Chemistry, Pontifical Catholic University of Chile
2005/7 – 2008/6	M.Sc., Chemistry, Pontifical Catholic University of Chile
2000/3 – 2005/6	B.Sc., Chemistry, University of Santiago of Chile

RECOGNITIONS

2010 – 2011	Post Doctoral Fellowship “Becas Chile” at University of Ottawa, Ontario, Canada
2008 – 2009	Fellowship CONICYT-CHILE International Exchange Program for Ph.D. Students, at University of Ottawa, Ontario, Canada
2008	Fellowship VRAID-MECESUP-CHILE International Exchange Program for Ph.D. Students, at Universidad Nacional de Santiago Del Estero, Argentina
2007	Fellowship MECESUP-PUC-CHILE to participate in the International Congress, 9^{o}CLFQO, Los Cocos, Argentina
2007	Fellowship MECESUP-PUC-CHILE to participate in an International Course in Fluorescence Spectroscopy: Principles & Applications, Pontifical Catholic University of Valparaiso, Valparaiso, Chile

USER PROFILE

Research Interests: Alarcon’s lab studies the development of biomaterials for new translational therapies for the treatment of damaged cardiac tissue, cornea and skin. The lab is also developing new nano-structures to overcome the current limitations of biomimetic tissue scaffolds for regenerative medicine. Listed below are some of the main areas my group is currently focused on:

- Injectable human recombinant human collagen, materials for cardiac tissue regeneration
- New light-activated biomatrices for in-situ cornea repair
- 3D hybrid scaffolds for regenerative medicine with improved antibacterial properties and neovascularization capabilities for diabetic foot
- Spray-on antibacterial biopolymers for tissue neovascularization and biofilm control of chronically infected tissues
- Hybrid nano-electro conductive fibers, and hydrogels, for cardiac patches and myocardial regeneration
- Development and characterization of specific peptide sequences for improving physiological stability of nanomaterials
- Effect of metal nanoparticles in biomolecule oxidation and degradation of hybrid nanomaterials for tissue engineering

Research Specialization Keywords: Biomaterials, translational medicine, nanomaterials, protein chemistry, tissue engineering, and free radical chemistry

Life-Time Summary (count, h-index: 17; h_{10}: 27):

	Published / In Press	Under review
Book editorship	1	1
Refereed Journal Papers/Reviews	58	2
Book chapters	5	3
Contributions presented in conferences	+50	-
Editorials	2	-
Patents	-	3

EMPLOYMENT HISTORY

2017 – current	Invited Professor, Pontifical Catholic University of Chile, Santiago, Chile
2016 – 2017	Invited Professor, Universidad de Santiago de Chile, Santiago, Chile
2015 – 2017	Visiting Researcher, Wellman Center for Photomedicine Massachusetts General Hospital, Harvard Medical School
2015 – current	Assistant Professor, Department of Biochemistry, Microbiology and Immunology, Faculty of Medicine, University of Ottawa, Ottawa, Ontario, Canada
2014 – current	Principal Investigator and Laboratory Director, University of Ottawa

	Heart Institute, Ottawa, Ontario, Canada
2012 – 2016	Visiting Researcher, University of Linkoping, Integrative Regenerative Medicine (IGEN) Center, Linkoping, Sweden
2012 – 2013	Visiting Researcher, Karolinska Institute, Center of Nanomedicine, Stockholm, Sweden
2012 – 2012	Visiting Professor, Universidad Nacional Andres Bello, Santiago, Chile
2011 – 2014	Research Associate, University of Ottawa, Ottawa, Ontario, Canada
2009 – 2013	Scientist Consultant for Luzchem Inc. Ottawa, Ontario, Canada
2009 – 2011	Postdoctoral research fellow, University of Ottawa, Ottawa, Ontario, Canada
2008 – 2009	Biochemistry Professor, Pontifical Catholic University of Chile, Santiago, Chile
2009 – 2009	Physical Chemistry Professor, Faculty of Chemistry, Universidad Nacional Andres Bello, Santiago, Chile
2007 – 2008	Chemist at Winkler Inc. Santiago, Chile

RESEARCH FUNDING HISTORY

In Progress (4)

Principal Investigator	Biomimetic Nano-Composite Materials for Tissue Engineering Funding Source: Natural Sciences & Engineering Research Council of Canada (NSERC) 2015/4 – 2020/4 Total Funding: $125,000 CAD
Co-Principal Investigator	Biosynthetic Alternative to Human Donor Corneal Transplantation Collaborative Health Research Grant (CHRP) Funding Source: NSERC and Canadian Institutes of Health Research (CIHR) 2017/4 – 2020/4 Total Funding: $662,000 CAD
Principal Investigator	Multilayered Hybrid Biomaterial for Treatment of Diabetic Foot Ulcers Funding Source: CIHR 2017/10 – 2021/10 Total Funding: $367,200 CAD
Co-Supervisor	Investigating the Effects of Recombinant Human Collagen Hydrogel

Injection on Heart Function & Infarct Repair Post-Myocardial Infarction
Funding Source: Frederick Banting & Charles Best Canada Graduate Scholarship (CIHR) – Doctoral Research Award
2017/10 – 2020/10 Total Funding: $105,000 CAD

Completed (4)

Principal Investigator	New Hybrid Materials for Regenerative Medicine Funding Source: University of Ottawa Heart Institute 2014/7 – 2016/7 Total Funding: $120,000 CAD
Principal Investigator	Biopolymer Coated Silver Nanoparticles with Anti-Biofilm & Anti-Inflammatory Properties for Sutureless Wound Closing Burroughs Welcome Trust 2015/7 – 2016/1 Total Funding: $13,000 CAD
Co-Investigator	Industrial Research Assistance Program (IRAP) Grant Funding Source: National Research Council (NRC) 2014/7 – 2015/1 Total Funding: $36,246
Principal Investigator	Postdoctoral Fellowship Funding Source: National Research Council Chile (CONICYT) 2010/1 – 2011/10 Total Funding: $20,000 CAD

ACTIVITES

STUDENT SUPERVISION Life-Time Summary (Count):

	In Progress	Completed
Graduated	3	5
Honors	1	6
Undergraduate and Summer students	3	7
Postdocs	4	-

Editorial

2017/8 –	Associate Editor, Frontiers in Biomaterials
2016/10 –	Associate Board Member, Heliyon, Elsevier
2015/2 – 2017/8	Guest Editor, New Frontiers for Biomaterials in Regeneerative Medicine
2014/7 –	Reviewing Editor, Frontiers in Bioengineering & Biotechnology & Materials
2013/12 – 2014/8	Lead Editor, Silver Nanoparticle Applications: In the Fabrication & Design of Medical & Biosensing Devises (Book, Springer)

International Collaboration Activities

2015/10 International Collaborator USA
International collaborator at Wellman Center for Photomedicine Massachusetts General Hospital, Harvard Medical School. My duties include being the team leader for the design, fabrication and translational uses of new technologies for treating diabetic foot ulcers.

2015/3 International Collaborator USA
International collaborator at Nanotechnology Innovation Center of Kansas State Institute of Computational Comparative Medicine Kansas State University. My duties include being the team leader in the design and testing of new peptide sequences for improving the stability, and minimizing toxicity, of nanomaterials in living-organisms.

2012/6 International Collaborator Sweden
International collaborator at Integrative Regenerative Medicine (IGEN) Centre
Linkoping University Dept. of Clinical and Experimental Medicine and Swedish Medical Nanoscience Center at Karolinska Institute. My duties include student's co-supervision and team leader for the design, fabrication and translational application of nanomaterials.

2014/3 – 2018/3 International Collaborator, Chile. International collaborator for the Grant N°1140240 FONDECYT, Chile "Photoinduced free radicals and excited triplet states formation in organized biological mimetic system". My duties include student's co-supervision, interchange of students, examination and research visits.

Reviewer for Scientific Journals & Agencies

Reviewer for Scientific Journals (+200 papers refereed): ACS Applied Materials & Interfaces (2016-2017); ACS OMEGA (2017), ACS Sustainable Chemistry & Engineering (2012); Analytical Methods (2014); Analyst (2012-2014); Biomaterials (2017); Biomaterials Science (2012-2014); Biomacromolecules (2014); BioMed Research International (2015); Brazilian Journal of Chemical Engineering (2014); Chemical Society Reviews (2015); Circulation (2015-2016); Colloids and Surfaces B: Biointerfaces (2013, 2016); Combinatorial Chemistry & High Throughput Screening (2012); HERMED (2017); Inflammation (2014); Frontiers in Biomaterials (2016, 2017); Frontiers in Immunology (2016); Frontiers in Microbes (2017); International Journal of Pharmaceutics (2017); Journal of Biomaterials Science (2015); Journal of Ethnopharmacology (2014-2015); Journal of Herbal Medicine (2016); Journal of Material Chemistry B (2013-2014); Journal of Molecular Structure (2010-2014); Journal

of Medicinal Food (2010); Journal of Nanoparticle Research (2012-2016); Journal of Nanobiotechnology (2016); Journal of Photochemistry and Photobiology A (2016-2017); Journal of Photochemistry and Photobiology B (2015-2017); Langmuir (2015-2016); Materials (2016); Molecules (2010;2014); Nanomaterials (2017); Nanoscale (2013, 2017); Nanotoxicology (2016); Nature Scientific Reports (2017); New Journal of Chemistry (2013-2014); Photochemical and Photobiological Sciences (2015, 2017); Photochemistry and Photobiology (2017); Physical Chemistry Chemical Physics (2013); PLOS One (2014); Polymer Chemistry (2013); Progress in Organic Coatings (2013-2015); RSC Advances (2011-2013; 2015; 2017); Soft Materials (2011-2013, 2017); The Journal of Physical Chemistry (2011-2013); Theranostic (2015).

Reviewer for international funding agencies: French National Research Agency (FNRA), France (2014-2015); Integrative Regenerative Medicine (IGEN) Grant program, Linköping University, Linköping, Sweden (2012); National Science and Technology Research Commission (FONDECYT), Chile (2012-2013, 2015-2016); National Science and Technology Research Commission (FONCYT), Argentina (2013), Saudi Arabia Competitive Research Grants (2017).

Reviewer for Book proposals of Editorial Houses: Elsevier

CONTRIBUTIONS

SELECTED INVITED ORAL PRESENTATIONS

Light-mediated Biopolymer Assembling as a new Tool for Regenerative Medicine. Invited talk, ELAFOT, Cordoba, Argentina, 2017, October 23-27th.

Novel Bio and Nanomaterials for tissue repair; Plenary lecture. 4th International Conference on Materials Science, Valdivia, Chile, 2017, October 16-19.

Light-Mediated Biopolymer Assembling as a New Tool for Tissue Engineering. Visiting Professor Lectureship, University of Santiago, Santiago, Chile, 2017, March 22nd.

Bio-polymer based tissue photo-bonding using rose Bengal: There is still something new under the sun. 25th Inter-American Photochemical Society, Santiago, Chile, 2016, May 24-27.

New bio-inspired hybrid materials for tissue engineering. 99th Canadian Society for Chemistry, Halifax, Canada, 2016, June 5-9.

Hybrid Nanoengineered Materials for Tissue Engineering; Plenary lecture. 3rd International Conference on Materials Science, Valdivia, Chile, 2015, October 21-23.

Hybrid Nanomaterials for Tissue Engineering; Invited talk. 98th Canadian Society for Chemistry, Ottawa, Canada, 2015, June 13-17.

Revisiting the use of Silver Nanoparticles in the Medical Sciences; Invited talk. Ottawa Student Chapter of the Canadian Biomaterials Society, Ottawa, Canada, 2015, April 29th.

Hybrid Nanomaterials for Biomedical Applications: Looking for Translational Applications; Invited Lecture as Visiting Professor. Seminar series at Pontifical Catholic University of Chile, 2014, October 22.

New Collagen-Base Hydrogels Containing Silver Nanoparticles with Anti-infective Properties for Tissue Regeneration: When Is It Too Much Silver?; Plenary Lecture. 8th Workshop of Computational Chemistry and Molecular Spectroscopy, Punta de Tralca, Chile, 2014, October, 23-26.

PEER REVIEWED CONTRIBUTIONS

Submitted (*Denotes trainee, ¥Corresponding author)

1. M. Mirazul Islam, O. Buznyk, Jagadesh C. Reddy, N. Pasyechnikova, **E. I. Alarcon**, S. Hayes, P. Lewis, P. Fagerholm, C. He, S. I Iakymenko, W. Liu, K. M. Meek, V. S. Sangwan, M. Griffith. Biomaterials-Enabled Cornea Regeneration in Patients at High Risk for Rejection of Donor Tissue Transplantation, ***Revisions Submitted, Nature Regenerative Medicine***.

2. J. R. Jangamreddy, M. K. C. Haagdorens, M. M. Islam, P. Lewis, A. Samanta, P. Fagerholm, A. Liszka, M. K. Ljunggren, O. Buznyk, **E. I. Alarcon**, N. Zakaria, K. M. Meek, M. Griffith. Short Peptide Analogs as Alternatives to Collagen in Pro-Regenerative Corneal Implants, ***Revisions Submitted, Acta Biomaterialia***.

Published/Accepted (2011 TO DATE, *Denotes trainee, ¥Corresponding author)

3. M. Ahumada,* E. Jacques, C. Andronic,* J. Comer,* H. Poblete, **E. I. Alarcon.¥** CLK-peptides as superior surface stabilizers for silver nanostructures: Role of peptide chain length (2017), Journal of Materials Chemistry B, in press.

1. **E. I. Alarcon**,¥ H. Poblete, H.-G. Roh, J.-F. Couture, J. Comer, I. E. Kochevar, Rose Bengal Binding to Collagen and Tissue Photobonding (2017), ACS OMEGA, 2, 6646–6657.

2. K. Hosoyama,* M. Ahumada,* C. D. McTiernan,* J. Bejjani,* F. Variola, M. Ruel, B. Xu, W. Liang, E. J. Suuronen, **E. I. Alarcon.¥** Multi-functional thermo-crosslinkable

collagen-metal nanoparticle composites for tissue regeneration: Nanosilver vs. Nanogold, *(2017) Accepted, RSC Advances*.

3. A. Aspée, C. Aliaga, L. Maretti, D. Zúñiga-Núñez, J. Godoy, E. Pino, G. Cárdenas-Jirón, C. Lopez-Alarcon, J. C. Scaiano, and **E. I. Alarcon** (2017). Reaction Kinetics of Phenolic Antioxidants Towards Photo-Induced Pyranine Free Radicals in Biological Models, The Journal of Physical Chemistry B, 121, 6331-6340.

4. S. Allison,* M. Ahumada,* C. Andronic,* B. McNeill,* F. Variola, M. Ruel, V. Hamel, W. Liang, E. Suuronen, and **E. I. Alarcon¥** (2017). Electroconductive nanoengineered biomimetic hybrid fibers for cardiac tissue engineering. Journal of Materials Chemistry B, 5, 2402-2406.

5. M. Ahumada,* E. Lissi, A. M. Montagut,* N. L. Pacioni, and **E. I. Alarcon¥** (2017). Association models for binding of molecules to nanostructures. Analyst, 142, 2067-2089.

6. J. Pupkaite,* M. Ahumada,* S. Mclaughlin,* M. Temkit,* S. Alaziz, R. Seymour, M. Ruel, I. Kochevar, M. Griffith, E. J. Suuronen, and **E. I. Alarcon¥** (2017). Collagen-Based Photoactive Agent for Tissue Bonding. ACS Applied Materials & Interfaces, 9, 9265-9270.

7. K. Maeda, **E. I. Alarcon**, E. J. Suuronen, and M. Ruel (2017). Optimizing the host substrate environment for cardiac vasculogenesis and myogenesis. Expert Opinion On Biological Therapy, 17, 435-447.

8. S. McLaughlin,* M. Ahumada,* W. Franco, T.-F. Mah, R. Seymour, E. J. Suuronen, and **E. I. Alarcon¥** (2016). Sprayable peptide-modified silver nanoparticles as barrier against bacterial colonization. Nanoscale, 8, 19200-19203.

9. M. Garcia, H. de Alwis Weerasekera, S. Pitre, B. McNeill,* A. M. Edwards, and **E. I. Alarcon¥** (2016). Photodynamic performance of zinc phthalocyanine in HeLa cells: A comparison between DPCC liposomes and BSA as delivery systems. Journal of Photochemistry and Photobiology B: Biology, 163, 385-390.

10. S. Mclaughlin,* J. Podrebarac,* M. Ruel, E. J. Suuronen, B. McNeill, and **E. I. Alarcon¥** (2016). Nano-engineered biomaterials for tissue regeneration: What has been achieved so far?. In Press, Frontiers Materials.

11. M. Liras, S. Simoncelli, A. Rivas-Arena, O. Garcia, J. C. Scaiano, **E. I. Alarcon**,¥ and A. Aspee (2016). Nitroxide amide-BODIPY probe behavior in fibroblasts

analyzed by advanced fluorescence microscopy. Organic & Biomolecular Chemistry, 14, 4023-6.

12. **E. I. Alarcon**,¥ B. Vulesevic, A. Argawal,* A. Ross,* P. Bejjani,* J. Podrebarac,* R. Ravichandran, J. Phopase, E. J. Suuronen, and M. Griffith (2016). Coloured cornea replacements with anti-infective properties: Expanding the safe use of silver nanoparticles in regenerative medicine. Nanoscale, 8, 6484-9.

13. M. Ahumada,* S. McLaughlin,* N. L. Pacioni, and **E. I. Alarcon**¥ (2016). Spherical Silver Nanoparticles in the Detection of Thermally Denatured Collagens. Analytical and Bioanalytical Chemistry, 408, 1993-6.

14. M. Griffith, **E. I. Alarcon**, and I. Brunette (2016). Regenerative Approaches for the Cornea. Journal of Internal Medicine, 9, 111–114.

15. H. Poblete, A. Agarwal,* S. S. Thomas, C. Bohne, R. Ranjithkumar, J. Phospase, J. Comer, and **E. I. Alarcon**¥ (2016). New Insights on Peptide–Silver Nanoparticle Interaction: Deciphering the Role of Cysteine and Lysine in the Peptide Sequence. Langmuir, 32, 265–273.

16. R. Ranjithkumar, M. Islam, **E. I. Alarcon**, A. Samanta, S. Wang, P. Lundström, J. Hilborn, M. Griffith, and J. Phopase (2016). Functionalised type I collagen as hydrogel building block for bio-orthogonal tissue engineering applications. Journal of Materials Chemistry B, 4, 318-326.

17. I. Brunette, **E. I. Alarcon**, and M. Griffith. Cornea Regeneration as an Alternative to Human Donor Transplantation (2015). European Ophthalmic Review, 9(2)

18. **E. I. Alarcon**¥, K. Udekwu, C. W. Noel,* L. B.-P. Gagnon, P. K. Taylor, B. Vulesevic, M. J. Simpson,* S. Gkotzis, M. Mirazul Islam, C.-J. Lee, A. Richter-Dahlfors, T.-F. Mah, E. J. Suuronen, J. C. Scaiano, and M. Griffith. (2015). Safety and Efficacy of Composite Collagen-Silver Nanoparticle Hydrogels as Tissue Engineering Scaffolds. Nanoscale. 7, 18789-18798.

19. Khetani, A. Momenpour, **E. I. Alarcon**, and H. Anis. (2015). Hollow core photonic crystal fiber for monitoring leukemia cells using surface enhanced Raman scattering (SERS). Biomedical Optics Express. 6: 4599-4609.

20. Ahmadi, S. L. Thorn, **E. I. Alarcon**, M. Kordos,Donna T. Padavana, T. Hadizad, G. O. Cron, R. S. Beanlands, J. N. DaSilva, M. Ruel, R. A. deKemp and E. J.

Suuronen (2015). PET imaging of a collagen matrix reveals its effective injection and targeted retention in a mouse model of myocardial infarction. Biomaterials. 49: 18-26.

21. S. Simoncelli,* H. de Alwis Weerasekera, C. Fasciani, C. Boddy, P. F. Aramendia, **E. I. Alarcon**,¥ and J. C. Scaiano. (2015). Thermoplasmonic ssDNA Dynamic Release from Gold Nanoparticles Examined with Advanced Fluorescence Microscopy. Journal of Physical Chemistry C. 6(8): 1499–1503.

22. S. Saez, C. Fasciani, K. G. Stamplecoskie, L. Brian-Patrick Gagnon, T.-F. Mah, M. L. Marin, E**. I. Alarcon¥** and J. C. Scaiano. (2015). Photochemical synthesis of biocompatible and antibacterial silver nanoparticles embedded within polyurethane polymers. Photochemistry and Photobiology. 14(4): 661-664.

23. M. Vignoni, H. de Alwis Weerasekera, M.J. Simpson,* J. Phopase, T.-F. Mah, M. Griffith, **E. I. Alarcon¥**, and J.C. Scaiano. (2014). LL37 peptide@silver nanoparticles: Combining the best of the two worlds for skin infection control. Nanoscale. 6(11): 5725-5728.

24. N. C. Angeluzzi,* M. Muñoz, D. T. Marquez, M. Baptista, A. M. Edwards, **E. I. Alarcon**,¥ and J. C. Scaiano. (2014). Silica nanoreactors from silylated riboflavin for efficient singlet oxygen delivery. Journal of Material Chemistry B. 2: 4221-4225.

25. M. González-Béjar, M. Liras, L. Francés -Soriano,V. Voliani, V. Herranz-Pérez, M. Duran-Moreno, J. M. Garcia Verdugo, **E. I. Alarcon**, J. C. Scaiano, and J. Pérez-Prieto. (2014). NIR excitation of upconversion nanohybrids containing a surface grafted Bodipy induces oxygen-mediated cancer cell death. Journal of Materials Chemistry B. 2: 4554-4563.

26. D. McTiernan, **E. I. Alarcon**, G. L. Hallett-Tapley, J. C. Netto-Ferreira, and J. C. Scaiano. (2014). An unusual electron transfer process from benzophenone triplet excited state directs the photochemical synthesis of gold nanoparticles. Photochemical and Photobiological Sciences. 13(2): 149-153.

27. D. McTiernan, C. Fasciani, M. González-Béjar, D. Roca-Sanjuán, **E. I. Alarcon¥**, and J. C. Netto-Ferreira. (2013). Ketorolac beats Ketoprofen: lower photodecarboxylation, photohemolysis and phototoxicity. Medical Chemical Communications. 4(11): 1619-1622.

28. Bueno, **E. I. Alarcon**, and A. M. Edwards. (2013). Effect of the incorporation into unilaminar vesicles on the photodegradation of indole sensitized by flavins. Journal of the Chilean Chemical Society. 58(4):2106-2109.

29. M. J. Simpson, D. Hjelmqvist, C. López-Alarcón, N. Karamehmedovic, T. G. Minehan, A. Yepremyan, B. Salehani, E. Lissi, E. Joubert, K. I. Udekwu, and **E. I. Alarcon**.¥ (2013). Anti-peroxyl radical quality and antibacterial properties of rooibos infusions and their pure glycosylated polyphenolic constituents. Molecules. 18(9): 11264-11280.

30. G. L. Hallett-Tapley, C. D'Alfonso, N. L. Pacioni, C. D. McTiernan, M. González-Béjar, O. Lanzalunga, **E. I. Alarcon**, and J.C. Scaiano. (2013). Gold Nanoparticle Catalysis of the Cis-Trans Isomerization of Azobenzene. Chemical Communications. 49(86): 10073-10075.

31. Malyshev, F. Boscá, G. L. Hallett-Tapley, Ch.-O. L. Crites, J. C. Netto-Ferreira, **E. I. Alarcon**, and J. C. Scaiano. (2013). Size-Controlled Photochemical Synthesis of Niobium Nanoparticles. Dalton Transactions. 42(39): 14049-14052.

32. M. J. Simpson,* H. Poblete, M. Griffith, **E. I. Alarcon¥**, and J. C. Scaiano. (2013). Impact of dyeprotein interaction and silver nanoparticles on rose Bengal photophysical behavior and protein photocrosslinking. Photochemistry and Photobiology. 89(6): 1433-1441.

33. Smith, M. Naji, L. Sangeeta Murugkar, C. Brideau, P. Stys, **E. I. Alarcon**, and H. Anis. (2013). Portable, miniaturized, fiber delivered, multimodal CARS exoscope. Optics Express. 21(4): 17161-17175.

34. **I. Alarcon**, C. J. Bueno-Alejo, C. W. Noel, K. G. Stamplecoskie, N. L. Pacioni, H. Poblete, and J. C. Scaiano. (2013). Human serum albumin as protecting agent of silver nanoparticles: role of the protein conformation and amine groups in the nanoparticle stabilization. Journal of Nanoparticle Research. 15(1): 1374-1377.

35. **E. I. Alarcon**, K. Udewku, M. Skog, N. Polisetti, N. L. Pacioni, K. G. Stamplecoskie, M. Gonzalez-Béjar, A. Richter-Dahlfors, M. Griffith, and J. C. Scaiano. (2012). The Biocompatibility and Antibacterial Properties of Collagen-stabilized, Photochemically Prepared Silver Nanoparticles. Biomaterials. 33(19):4947-4956.

36. J. Bueno-Alejo, C. D'Alfonso, N. Pacioni, M. González-Béjar, O. Lanzalunga, **E. I. Alarcon** and J. C. Scaiano. (2012). Ultraclean custom-derivatized monodisperse

gold nanoparticles through laser drop ablation of polymorph gold nanostructures. Langmuir. 28(21): 8183–8189.

37. **I. Alarcon**, M. Gonzalez-Bejar, H. Garcia, E. Lissi, and Juan C. Scaiano. (2012). Unexpected solvent isotope effect on the triplet lifetime of methylene blue associated to cucurbit[7]uril.Photochemical and Photobiological Sciences. 11(2): 269-273.

38. Aspée, **E. I. Alarcon**, E. Pino, S. Goreslky, and J. C. Scaiano. (2012). Coumarin 314 free radical cation: formation, properties and reactivity towards phenolic antioxidants. Journal of Physical Chemistry A. 116(1): 199-206.

39. **I. Alarcon**, A. Aspee, E. B. Abuin, and E. A. Lissi. (2012). Evaluation of solute binding to proteins and intra-protein distances from steady state fluorescence measurements. Journal of Photochemistry and Photobiology B: Biology. 106(1): 1-17.

40. Hugo, E. Abuin, E. Lissi, **E. Alarcon**, and A. M. Edwards. (2011). Effect of Temperature on the Photobehavior of Rose Bengal Associated with Dipalmitoylphosphatidyl Choline Liposomes. Journal of Luminescence. 131(12): 2468-2474.

41. J.C. Scaiano, J. C. Netto-Ferreira, **E. Alarcon** et al. (2011). Tuning plasmon transitions and their applications in organic photochemistry. Pure and Applied Chemistry. 83(4): 913-930.

42. M. Garcia, **E. Alarcon**, M. Muñoz, J. C. Scaiano, A. M. Edwards, and E. Lissi. (2011). Photophysical behavior and Photodynamic activity of Zinc Phthalocyanines Associated to Liposomes. Photochemical and Photobiological Sciences. 10(4): 504-514.

43. L. Jimenez, **E. Alarcon**, C. Trevithick-Sutton, N. Gandhi and J. C. Scaiano. (2011). Effect of γ-radiation on green onion DNA integrity: Role of ascorbic acid and polyphenols against nucleic acid damage. Food Chemistry. 128(3): 735-741.

PATENTS

1. Biocompatible Hydrogel Compositions and Uses Thereof. United States. 2017/05/05. Patent Status: Pending

2. Fabrics Functionalized with Pharmacologically Active Substances. United Kingdom. 2017/03/09. Patent Status: Pending

3. Composition of photo-cross-linkable biomaterial. United States. 2017/09/15. Patent Status: Pending

BOOKS EDITED

Emilio I. Alarcon, May Griffith and Klas I. Udekwu. Silver Nanoparticle Applications: In the Fabrication and Design of Medical and Biosensing Devices. (2015), 146 pages, ISBN 978-3319112619, Springer, United Kingdom.

BOOK CHAPTERS (¥Corresponding author)

M. Ahumada, E. Suuronen, and **E. I. Alarcon**. Biomolecule Silver Nanoparticle-Based Materials for Biomedical Applications, Handbook of Ecomaterials, Springer Nature (2017), doi:10.1007/978-3-319-48281-1.

F. Simpson, **E. I. Alarcon**, J. Hilborn, I. Brunette, and M. Griffith. Regenerative Medicine in the Cornea, In Principles of Regenerative Medicine, 3rd Edition, Elsevier. (2017), *Under review*.

M. Griffith, O. Buznyk, **E. I. Alarcon**, and F. Simpson. Artificial Corneas. In Reference Module in Neuroscience and Biobehavioral Psychology, Elsevier. (2017), ISBN 9780128093245. ISBN: 9780128093245.

James Podrebarac, Joel Edin, Erik J. Suuronen, **Emilio I. Alarcon**,¥ May Griffith. Nanosciences and Medicine of Ageing. Oxford Textbook of Geriatric Medicine. (2018)*, In Press*.

Hasitha de Alwis Weerasekera, May Griffith and **Emilio I. Alarcon**.¥ Biomedical uses of silver nanoparticles: From Roman wine cups to biomedical devices. Silver Nanoparticle Applications: In the Fabrication and Design of Medical and Biosensing Devices. (2015), 93-125. Springer, United Kingdom.

May Griffith, Klas I. Udekwu, Spyridon Gkotzis, Thien-Fah Mah and **Emilio I. Alarcon**.¥ Antimicrobiological and anti-infective activities of silver. Silver Nanoparticle Applications: In the Fabrication and Design of Medical and Biosensing Devices. (2015), 127-416. Springer, United Kingdom.