

JUAN PABLO AGUILAR ALEMÁN

Biomedical, Entrepreneur & Tissue Engineer



Skype: jpaguilar83

Zapopan, Jalisco, México

Mobile: +52 3312892430

LinkedIn

e-mail: jpaguilar@gmail.com

Summary

Highly trained and experienced researcher, innovator, high-tech consultant, academic director, inventor, high-tech seller, entrepreneur and biomedical professional, with proven experience, published material and patented work in high-tech fields such as tissue engineering, 3D cell culture, 3D bioprinting, regenerative medicine, biomaterials, nanotechnology, advanced medical devices, advanced signal processing, smart textiles and drug delivery systems. Professional experience in the full product development lifecycle for commercial medical devices and applied technologies. Experience in FDA and CE Marks for medical devices. Team player with excellent communication and written skills. Team leader and project manager with experience in sales and supply management. Published author and experienced public speaker. Finally, cofounder and CEO of Biosysco a company who gives sustainable solution for the medical waste and Telesphorus Technologies who is developing an APP for treatment adherence for chronic patients.

Main Achievements:

- Raised 160K USD of seed capital for the starting up company (**Biosysco**) and opportunity to pitch at international forums for raising seed capital (**Telesphorus**)
- Consolidated such one of the best undergraduate program for Biomedical Engineering in Mexico and increasing the enrollment from 35 students for class to 60. (**ITESM**),
- Conceived and co-leading a cross-functional team for validate biological composites for bone regeneration printed by 3D printer system (**Inmateriis**).
- 4 high-Impact publication, a granted and a solicitation patents from my pre-doctoral research due to the novelty and originality of the project (**Barcelona Science Park and Institute for Research in Biomedicine**)
- Conceived and designed a full line of intelligent garments for chronic patient to be launched the next season (**FITEX**).
- Re-designed of textile electrodes for a wearable electrocardiogram system (**CETEMMSA**).
- Implemented an affordable and novelty protocol for a clinical trail for a cardiac output monitor and granted 250k EUR for developing an impedance system for cancer detection due to the innovation and quality of the project. (**Quantium Medical**).
- Development of a guide for contract manufactures company to reorient to medical device market and conducted innovation process for a children hospital with 2 medical devices development as a result (**IDOM**).

Keywords: *Innovation, Translational Researcher, 3D printing, Hydrogels, Scaffolds, Tissue Engineering, Smart Textiles, Medical Devices, High-Tech Consulting, Advanced Signal Processing, Academic, Proteomics, Entrepreneur, Sustainable Development, Pharmaceuticals.*

Entrepreneur Experience

Biosysco

CEO & Founder

May/2017-Present

Telesphorus Technologies

CEO & Founder

May/2017-Present

Academic Experience

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<u>Tech of Monterrey, Campus Guadalajara</u>	August/2015- Present
<i>Biomedical Engineering Academic Program Director</i>	
<u>Tech of Monterrey, Campus Guadalajara</u>	January/2015- July/2015
<i>Full Time Professor</i>	
<u>Polytechnic University of Sinaloa</u>	September/2014-December/2014
<i>Assistant Professor Type B</i>	

Consultant

Experience

<u>Inmateriis</u>	August/2015- April/2016
<i>External Consultant</i>	
<u>Quantum Medical</u>	June/2013-August/2014
<i>External Project Manager</i>	

Industrial

Experience

<u>Private Foundation for Textile Innovation (FITEX)</u>	November/2012-July/2013
<i>Bioengineering Manager</i>	
<u>Quantum Medical</u>	July/2011– January/2012
<i>Developer and Test Engineer</i>	
<u>CETEMMSA</u>	April/2010-September/2010
<i>Smart Device Developer</i>	
<u>IDOM</u>	March/2009-Janaury/2010
<i>Junior Consultant</i>	

Research

Experience

<u>Institute for Research in Biomedicine</u>	July/2013– October/2014
<i>Ph.D. Research Fellow</i>	
<u>Barcelona Science Park</u>	September/2010-July/2013
<i>Ph.D. Fellow</i>	

Academic

Studies

Sep 2010–Actual	Biomedicine, Ph.D	Barcelona, Spain
Feb 2009–Sep 2010	Biomedical Engineering, M.Sc.	Barcelona, Spain
Aug 2002–Dec 2007	Biomedical Engineering, B.Sc.	Monterrey, N.L., Mexico

Publications

Juan P. Aguilar, Michal Lipka Edxon E. Licon-Bernal, Juan M. Fernández-Pradas, Andriy Yaroshchuk, Michal Lipka, Fernando Albericio, Alvaro Mata. 3D electrophoresis-assisted lithography (3DEAL): 3D molecular printing to create functional patterns and anisotropic hydrogel. Adv. Funct. Mater. 2017, 1703014 doi: 10.1002/adfm.201703014

Lipka M, **Aguilar JP**, Licon-Bernal EE, Fernandez-Pradas JM, Yaroshchuk A, Albericio F and Mata A (2016). Novel molecular printing method to create complex 3D hydrogels with precise molecular composition. Front. Bioeng. Biotechnol. Conference Abstract: 10th World Biomaterials Congress. doi: 10.3389/conf.FBIOE.2016.01.01823

Juan P. Aguilar, Edxon E. Licon-Bernal, Juan M. Fernández-Pradas, Andriy Yaroshchuk, Fernando Albericio, Álvaro Mata. 3D electrophoresis-assisted lithography (3DEAL) for patterning hydrogel environments. Journal of Tissue Engineering and Regenerative Medicine Vol. 8 9 JUN 2014 | DOI: 10.1002/term.1932

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Mathieu Jospin, **Juan P. Aguilar**, Pedro L. Gambús, Erik W. Jensen, Montserrat Vallverdú and Pere Camina. Validation of the qCO Cardiac Output Monitor During Valsalva Maneuver. Conf Proc IEEE Eng Med Biol Soc. 2012;2012:240-3. doi: 10.1109/EMBC.2012.6345914.

Conferences

'Novel molecular printing method to create complex 3D hydrogels with precise molecular composition.' Michal Lipka, **Juan P Aguilar**, Edxon E Licon-Bernal, Juan M Fernandez-Pradas, Andriy Yaroshchuk, Fernando Albericio, Alvaro Mata. Conference: World Congress of Biomaterials 2016, Montreal Quebec, Canada. Dates 17-22 May, 2016 (*AWARDED*)

'Ambientes biomiméticos para la evaluación y desarrollos de fármacos.' **Juan Pablo Aguilar**. Curso Internacional de Medicina Regenerativa y Células Troncales. Guadalajara, Jalisco. Dates 8-11 May,

'Novel Technology To Create 3D Anisotropic Hydrogel Materials With Precise Molecular Composition'. Authors: MichalA. Lipka, **Juan Pablo Aguilar**, Pankaj Vadgama, Alvaro Mata. Conference: 2015 TERMIS World Congress. Place: Marriott Copley Place Hotel in Boston, Massachusetts, USA. Dates: 8-11 March, 2015

'3D anisotropic hydrogel materials with precise molecular composition'. Authors: Michal A. Lipka, **Juan Pablo Aguilar**, Pankaj Vadgama, Alvaro Mata. Conference: Fourth International Conference on Multifunctional, Hybrid and Nanomaterials (Hybrid Materials 2015). Place: Sitges (near Barcelona), Spain. Dates: 9 - 13 March 2015

'3D electrophoresis-assisted lithography (3DEAL) for 3D anisotropic cell culture platforms' Authors: Michal A. Lipka, **Juan Pablo Aguilar**, Pankaj Vadgama, Alvaro Mata. Conference: Medical Engineering Centres Annual Meeting and Bioengineering14. Place: Imperial College London, London, UK. Dates: 10-11 September 2014

Patents

Aguilar Aleman JP, Sanchez Sosa Gisela, Santos Garcia Arturo. Formulación de ácido paracético para la eliminación de virus en residuos peligrosos biológico infecciosos, Patent application MX/E/2018/035286, filed May 18, 2018

Mata A, Lipka M, **Aguilar JP**. New 3DEAL device. Patent application GB1608674.6, filed May 17, 2016.

Mata A, **Aguilar JP**. Method for manufacturing a three-dimensional biomimetic scaffold and uses thereof. N/Ref. P7401EP00, S/Ref. 3DEAL, EP 12382102.7, filed 21/03/12.

Languages

Spanish: Advanced (Native)

English: Advanced

Catalan: Basic

Honors and Awards

2017 Biosysco, Top 40 at the Cleantech Challenge Mexico.

2016 Trainee Award from Medtronic Sofradim, at the World Biomaterial Congress 2016

2010-2014 Fellowship for PhD students awarded by the Ministry of Economy and Competitiveness. FPI program (*Beca para la Formación de Personal Investigador*).