

Curriculum Vitae – João Conde, PhD



PERSONAL DETAILS

Professional Website: <https://www.conde-nanolab.com/>

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Hobby: Painting – <http://condeart.carbonmade.com/>

EDUCATION

- **Ph.D. in Biology**, Specialty **Nanobiotechnology**, *Summa cum laude*, New University of Lisbon, Portugal and Instituto de Nanociencia de Aragón at Zaragoza University, Spain, 2014.
- Five-year **Bachelor's** degree in **Biology**, *Summa cum laude*, Universidade Lusófona de Humanidades e Tecnologias, Portugal, 2008.

APPOINTMENTS

- February 2020 – Present: **Assistant Professor** at **NOVA Medical School, Universidade Nova de Lisboa** (Portugal).
- February 2020 – Present: **Principal Investigator** at **NOVA Medical School, Universidade Nova de Lisboa** (Portugal).
- October 2017 – January 2020: **Junior Researcher** at the **Instituto de Medicina Molecular, Faculdade de Medicina de Lisboa** (Portugal).
- May 2014 – April 2017: **Marie Curie Early-Stage Career Fellow** at the **Massachusetts Institute of Technology, Harvard–MIT Division for Health Sciences and Technology, Institute for Medical Engineering and Science** (US) and in School of Engineering and Materials Science at **Queen Mary University London** (UK).
- January 2010 – December 2013: **Science and Technology Foundation PhD Fellow** (FCT, SFRH/BD/ 62957/2009), **Universidade Nova de Lisboa** (Portugal) and **Zaragoza University** (Spain).
- January 2009 – January 2010: Research fellowship (PTDC/BIO/66514/2006), Research Centre for Human Molecular Genetics, **Science and Technology Faculty** (Portugal).
- September 2007 – December 2008: Under-graduate fellowship, Molecular Genetics Department at **NOVA Medical School** (Portugal).

BACKGROUND

- Cancer Nanomedicine, Nanotechnology and Materials Science.
- Biomedical Engineering.
- Multifunctional nanomaterials for Cancer therapy and diagnostics – NanoTheranostics.
- Biofunctionalization of nanoparticles with DNA/RNA, siRNA/miRNA, drugs, fluorescent dyes, polymers, proteins/peptides and antibodies.
- Design of novel biosensors based on nanometric systems.
- *In vitro/ in vivo* applications of new nanomaterials: gene therapy, drug delivery, tumor targeting.
- Smart hydrogels and platforms for local therapy in cancer.
- Gene therapy/Antisense DNA/RNAi/microRNA, gene editing CRISPR.
- *In vivo* cancer mice models (breast, colon, gastric, glioblastoma, ovarian and lung cancer) – tumour induction and administration (systemic and local) of anti-cancer therapies.

TEACHING

- 2020/Present – Classes of Genetics, **NOVA Medical School, Universidade Nova de Lisboa.**
- 2010/2014 - Lab classes of **Molecular Dignostics and Bionanotechnology** from **Master Course in Molecular Genetics and Biomedicine, Universidade Nova de Lisboa.**

MENTORING EXPERIENCE

- Charlotte Baker, **PhD Student**, Instituto de Medicina Molecular (Oct 2017-to present).
- Daniel Fulop, **MSc student**, Harvard University Sophomore Internship (Jun 2015-Feb 2016).
- Cristina Violi, **MSc student**, student Socrates-Erasmus Programme Italy, (Feb 2013-Aug 2013).
- André Salvada, **BSc student** in Cell and Molecular Biology from New University of Lisbon, (Jan 2013-Mar 2013).
- Pedro Dionisio, **BSc student** in Cell and Molecular Biology from New University of Lisbon, (Mar 2011-Sept 2011).

AD HOC REVIEWER

- Nature Reviews Cancer; Nature Protocols; PNAS; Accounts of Chemical Research; Chemical Reviews; Advanced Drug Delivery Reviews; Progress in Polymer Science; Advanced Materials; ACS Nano; Advanced Functional Materials; Nature Asia Materials; Chemical Science; Theranostics; Small; Journal of Controlled Release; Nanoscale; Analytical Chemistry; Advanced Healthcare Materials; Scientific Reports; Nanomedicine; Nanotoxicology; Nanomedicine: NBM; Acta Biomaterialia; Journal of Materials Chemistry B; PLoS ONE; ACS Applied Materials & Interfaces; Bioconjugate Chemistry; Journal Biomedical Nanotechnology; Sensors & Actuators: B. Chemical; Advanced Science; Nanoscale Research Letters; Colloids and Surfaces B: Biointerfaces; Journal of Nanobiotechnology; Biomacromolecules; Drug Development and Industrial Pharmacy; Materials; Frontiers in Genetics; Critical Reviews in Oncology/Hematology; International Journal of Nanomedicine; Pharmaceutical Medicine; European Polymer Journal; Frontiers in Chemistry; Frontiers in Pharmacology; Journal of Biophotonics; Journal of Applied Biomedicine.

Publons: <https://publons.com/author/1358364/joao-conde#profile>

EDITOR

- **Book editor**, “Handbook of Nanomaterials for Cancer Theranostics” by Elsevier (2017 - to present).
- **Volume Editor**, in the Advanced Nanomaterials Series, Elsevier (2016 - to present).
- **Editorial Board**, Nano Biomedicine and Engineering Journal (2016 - to present).
- **Associate Editor**, Frontiers in Bioengineering and Biotechnology (2015 - to present).
- **Associate Editor**, Frontiers in Molecular Biosciences (2015 - to present).
- **Associate Editor**, Frontiers in Materials (2015 - to present).
- **Guest Associate Editor**, Frontiers in Chemistry (2014 - to present).

COLLABORATIONS

- **Massachusetts Institute of Technology (US), Yale University (US), Harvard Medical School (US), Harvard University (US), Broad Institute of MIT and Harvard (US), Brigham and Women's Hospital (US), Dana-Farber Cancer Institute (US), University of Pennsylvania (US), Faculty of Medicine at Tel Aviv University (Israel), Johns Hopkins University (US), Case Western Reserve University (US), University of Cambridge (UK), University of Oxford (UK), University Hospital Düsseldorf (Germany), Dublin Institute of Technology (Ireland), Institute of Nano Biomedicine and Engineering at Shanghai JiaoTong University (China), Centre for Cell Engineering at University of Glasgow (UK), Instituto di Cibernetica “E. Caianiello” (Italy),**

Institute of Lung Biology and Disease at Helmholtz Zentrum München (Germany), **Technische Universität München** (Germany), **Fundação Champalimaud** (Portugal), **REQUIMTE** (Portugal), **iMed.UL** (Portugal).

PARTICIPATION IN RESEARCH PROJECTS AS TEAM MEMBER

- Albumedix Ltd. - Recombinant albumin conjugates for cancer therapy (2018).
- SuprHApolymers - Engineering self-assembly of hyaluronan-based glycopolymers with peptides (2016).
- NOF Corporation - Characterization of PEG-based hydrogels (2014-2015).
- NANOTRUCK- Multifunctional gold nanoparticles for gene therapy. EU, ERANET-NanoSciera⁺ (2012-2014).
- Silence is golden (siAu) - Silencing the silencers via multifunctional gold nanoconjugates towards cancer therapy. FFCT/FCT/UNL, PTDC/BBB-NAN/1812/2012.
- Nanosystems for delivery of caged compounds. FFCT/FCT/UNL, PTDC/QUI-QUI/ 112597/2009.
- Sensitive and selective detection of DNA/RNA based on functionalized gold nanoparticles - application to pathogen detection; mutation detection and RNA quantification. FFCT/FCT/UNL, PTDC/BIO/66514/2006.

PRIZES AND AWARDS

- 2019 - **ERC Starting Grant**: ERC-StG-2019-848325.
- 2018 - **Junior Investigator**: FCT Stimulus of Scientific Employment, Portugal.
- 2017 - **Wellcome Image Awards 2017**: Wellcome Trust, UK.
- 2016 - **Nano-Micro Letters Researcher Award**, Nature Research Society.
- 2016 - **National Cancer Institute Image award**: Cancer close up, USA.
- 2013 - **Marie Curie International Outgoing Fellowship** for Career Development, Marie Skłodowska- Curie actions (FP7-PEOPLE-2013-IOF).
- 2009 - **PhD Fellowship** - National Science Foundation Portugal - PhD Grant (FCT, SFRH/BD/ 62957/2009).

PATENTS

1. Theranostic Nanoprobes for Overcoming Cancer Multidrug Resistance and Methods. **U.S. Application No. 62/118101. MIT Case No. 17685K**, MIT Docket No. 17685.117921.
2. RNA Triple Helix Structures, Compositions, and Methods. **U.S. Application No. 62/216969. MIT Case No. 18323 PCT**, MIT Docket No. 17648-0205.
3. Hydrogel particles, compositions, and methods. **U.S. Application No. 62/339434**.
4. Micro-RNA delivery compositions, devices, and methods. **U.S. Application No. 62/353622**.
5. Functionalized nanoparticles and compositions for cancer treatment and methods. **U.S. Application No. 62/334538**.
6. TRPV2 Antagonists. **WO Application No. PCT/PT2018/050035**.

PUBLICATIONS

- More than **60 articles** in high impact journals in fields of Materials Science, Nanomedicine and Nanotechnology (*Nature Materials* **IF38.6**, *Nature Communications* **IF12.1**, *PNAS* **IF9.3**, *Accounts of Chemical Research* **IF19.8**, *Progress in Materials Science* **IF31.6**, *ACS Nano* **IF13.7**, *Advanced Materials* **IF25.8**, *JACS* **IF14.7**, *Angewandte Chemie* **IF12.9**, *Advanced Functional Materials* **IF15.6**, *Biomaterials* **IF10.2**, *Journal of Controlled Release* **IF7.6**, *Biosensors & Bioelectronics* **IF9.5**, *Trends in Biotechnology* **IF14.3**, *Nature Asia Materials* **IF8.1**, *Trends in Cancer* **IF8.9**, *Advanced Drug Delivery Reviews* **IF15.5**).

• **More than 30 articles as 1st author, and more than 20 articles as corresponding author and cited more than 4000 times (h-index 35).** Seven of them have been selected as cover page of journals such as **Adv. Functional Materials, JACS, Adv. Healthcare Materials, Analytical and Bioanalytical Chemistry and BioTechniques.**

KEY PUBLICATIONS (* corresponding author)

1. “Above and beyond Cancer Therapy: translating biomaterials into clinics” **João Conde*** *Trends in Cancer* (2020).
2. “Tetrazine carbon nanotubes for pretargeted in vivo ‘click-to-release’ bioorthogonal imaging” (VIP paper) H. Li, **João Conde**, A. Guerreiro, G.J.L. Bernardes. *Angewandte Chemie International Edition* (2020).
3. “Platinum-triggered Bond-cleavage of Pentynoyl amide and N-propargyl handles for Drug-Activation” B.L. Oliveira, B.J. Stenton, Unnikrishnan V.B., C.R. Almeida, **João Conde**, M. Negrão, F.S.S. Schneider, C. Cordeiro, M.G. Ferreira, G.F. Caramori, J.B Domingos, R. Fior and G.J.L. Bernardes. *Journal of the American Chemical Society* (2020). Featured on COVER
4. “Prolonged Local In Vivo Delivery of Stimuli-Responsive Nanogels That Rapidly Release Doxorubicin in Triple-Negative Breast Cancer Cells”. Y. Zhang, P. Dosta, **João Conde**, N. Oliva, M. Wang and N. Artzi. *Advanced Healthcare Materials* (2020).
5. “Oral pH sensitive GNS@ab Nanoprobes for targeted therapy of Helicobacter Pylori without disturbance gut microbiome” X. Zhi, Y. Liu, L. Lin, M. Yang, L. Zhang, L. Zhang, Y. Liu, G. Alfranca, L. Ma, Q. Zhang, H. Fu, **João Conde**, X. Di, J. Ni, J. Song, D. Cui. *Nanomedicine: Nanotechnology, Biology and Medicine* (2019).
6. “Biopolymers for anti-tumor implantable drug delivery systems: Recent advances and future outlook”. S. Talebian, S. Wadeb, J. Foroughi, K. L. Vineb, A. Dolatshahi-pirouz, M. Mehrli, **João Conde**, G. Wallace. *Advanced Materials* (2018)
7. “Ferritin nanocarrier traverses the blood brain barrier and kills glioma”. K. Fan, X. Jia, M. Zhou, **João Conde**, J. He, J. Tian, X. Yan. *ACS Nano* (2018)
8. “Local triple-combination therapy results in tumour regression and prevents recurrence in a colon cancer model”. **João Conde***, N. Oliva, Y. Zhang and N. Artzi. *Nature Materials* (2016). **Highlighted in Science Translational Medicine and Science Bulletin. Highlighted in Science Translational Medicine.**
9. “Local microRNA delivery targets Palladin and prevents metastatic breast cancer”. A. Gilam, **João Conde**, D. Weissglas-Volkov, N. Oliva, N. Artzi, N. Shomron. *Nature Communications* (2016).
10. “Self-assembled RNA-triple-helix hydrogel scaffold for microRNA modulation in the tumour microenvironment”. **João Conde***, N. Oliva, M. Atilano, H.S. Song, N. Artzi. *Nature Materials* (2016). **Highlighted in Science Translational Medicine.**
11. “Dual-Color Emissive Upconversion Nanocapsules for Differential Cancer Bioimaging *in vivo*”. O.S. Kwon, H.S. Song, **João Conde**, H. Kim, N. Artzi and J.H. Kim. *ACS Nano* (2016).
12. “Revisiting the ‘one material fits all’ rule for cancer nanotherapy”. **João Conde***, N. Oliva, N. Artzi*. *Trends in Biotechnology* (2016).
13. “Implantable hydrogel embedded dark-gold nanoswitch as a theranostics probe to sense and overcome cancer multidrug resistance”. **João Conde***, N. Oliva, N. Artzi. *PNAS* (2015). **Highlighted in Nature Reviews Drug Discovery.**

14. "Dual targeted immunotherapy via *in vivo* delivery of bio-hybrid RNAi-peptide nanoparticles to tumour-associated macrophages and cancer cells". **João Conde***, C. Bao, Y. Tan, D. Cui, E.R. Edelman, H.S. Azevedo, H.J. Byrne, N. Artzi, F. Tian. **Advanced Functional Materials** (2015). **VIP paper featured on the Front Cover.**
15. "RNAi-based glyconanoparticles trigger apoptotic pathways for *in vitro* and *in vivo* enhanced cancer-cell killing". **João Conde**, F. Tian, Y. Hernandez, C. Bao, P.V. Baptista, D. Cui, T. Stoëger and J.M. de la Fuente. **Nanoscale** (2015).
16. "Antibody-Drug gold nanoantennas with Raman spectroscopic fingerprints for *in vivo* tumour theranostics." **João Conde***, C. Bao, D. Cui, P. Baptista, F. Tian. **Journal of Controlled Release** (2014).
17. "*In vivo* tumour targeting via nanoparticle-mediated therapeutic siRNA coupled to inflammatory response in lung cancer mouse models." **João Conde**, F. Tian, Y. Hernández, C. Bao, D. Cui, K.P. Janssene, M.R. Ibarra, P.V. Baptista, T. Stoëger and J.M. de la Fuente. **Biomaterials** (2013).
18. "Gold-Nanobeacons for simultaneous gene specific silencing and intracellular tracking of the silencing events." **João Conde**, J. Rosa, J.M. de la Fuente and P.V. Baptista. **Biomaterials** (2013).
19. "Design of Multifunctional Gold Nanoparticles for *in vitro* and *in vivo* Gene Silencing." **João Conde**, A. Ambrosone, V. Sanz, Y. Hernández, V. Marchesano, F. Tian, H. Child, C.C. Berry, M.R. Ibarra, P.V. Baptista, C. Tortiglione and J.M. de la Fuente. **ACS Nano** (2012).

OTHER PUBLICATIONS AS CORRESPONDING AUTHOR

1. "Smart NIR linear and nonlinear optical nanomaterials for cancer theranostics: Prospects in photomedicine". T-M. Liu, **João Conde***, T. Lipiński, A. Bednarkiewicz and C-C. Huang. **Progress in Materials Science** (2017).
2. "Plasmonic gold nanoparticles for detection of fungi and human cutaneous fungal infections". T. Sojinrin, **João Conde***, K. Liu, J. Curtin, H.J. Byrne, D. Cui and F. Tian. **Analytical and Bioanalytical Chemistry** (2017).
3. "Gold Nanostars for real-time intracellular and *in vivo* SERS detection combined with drug delivery via plasmonic-tunable Raman/FTIR imaging". F. Tian, **João Conde***, C. Bao, Y. Chen, J. Curtin and D. Cui. **Biomaterials** (2016).
4. "Chiral Antioxidant-based Gold Nanoclusters Reprogram DNA Epigenetic Patterns". Y. Ma, H. Fu, C. Zhang, S. Cheng, J. Gao, Z. Wang, W. Jin, **João Conde*** and D. Cui. **Scientific Reports** (2016).
5. "Revisiting the classification of NIR absorbing/emitting Nanomaterials for *in vivo* bio-applications". T-M. Liu, **João Conde***, T. Lipinski, A. Bednarkiewicz, C-C. Huang. **Nature Asia Materials** (2016).
6. "3D hydrogel scaffold doped with 2D materials for biosensors and bioelectronics". H.S. Song, O.S. Kwon, **João Conde*** and N. Artzi. **Biosensors & Bioelectronics** (2016).
7. "RNAi nanomaterials targeting immune cells as an anti-tumor therapy: the missing link in cancer treatment? **João Conde***, C. Arnold, F. Tian and N. Artzi. **Materials Today** (2015).
8. "Bioresponsive antisense DNA gold nanobeacons as a hybrid *in vivo* theranostics platform for the inhibition of cancer cells and metastasis". C. Bao, **João Conde***, J. Curtin, N. Artzi, F. Tian, D. Cui. **Scientific Reports** (2015).
9. "Editorial: Cancer Nanotheranostics - What have we learned so far?". **João Conde***, F. Tian, J.M. de la Fuente, P.V. Baptista. **Frontiers in Chemistry** (2015).
10. "The Golden Age in Cancer Nanobiotechnology: Quo vadis?". **João Conde***. **Frontiers in Bioengineering and Biotechnology** (2015).

11. "15 years on siRNA delivery: beyond the State-of-the-Art on inorganic nanoparticles for RNAi therapeutics". **João Conde***, A. Ambrosone, Y. Hernandez, F. Tian, M. McCully, C.C. Berry, P.V. Baptista, C. Tortiglione, J.M. de la Fuente. *Nano Today* (2015).
12. "The next generation of smart gold nanobeacons: nanotheranostics is ready for prime-time". **João Conde*** and N. Artzi. *Nanomedicine (Lond.)* (2015).
13. "Are RNAi and miRNA therapeutics truly dead?". **João Conde**, N. Artzi. *Trends Biotechnology* (2015).
14. "Target-Responsive DNA/RNA nanomaterials for microRNA sensing and inhibition: the jack-of-all-trades in cancer nanotheranostics?". **João Conde***, E.R. Edelman, N. Artzi. *Advanced Drug Delivery Reviews* (2015).
15. "Revisiting 30 years of Biofunctionalization and Surface Chemistry of Inorganic Nanoparticles for Nanomedicine." **João Conde***, J.T Dias, V. Grazú, M. Moros, P.V. Baptista, Jesús M. de la Fuente. *Frontiers in Chemistry* (2014).
16. "Nanomaterials for reversion of multidrug resistance in cancer: a new hope for an old idea?" **João Conde***, J.M. de la Fuente, P.V. Baptista. *Frontiers in Pharmacology* (2013).

For complete list of publications please check <https://www.conde-nanolab.com/>

BOOKS and BOOK CHAPTERS (* corresponding author)

1. "Handbook of Nanomaterials for Cancer Theranostics" 1st Edition, Editor: João Conde, Elsevier, 2018.
2. "Displaying biofunctionality on materials through templated self-assembly", K. Shuturminska, C. O'Malley, D. W. P. Collis, **João Conde**, H. S. Azevedo, in Self-Assembling Biomaterials: Molecular Design, Characterization and Application in Biology and Medicine, *Elsevier*, 2018.
3. "Empowering the potential of cell-penetrating peptides for targeted intracellular delivery via molecular self-assembly", Y. Shi, **João Conde**, H. S. Azevedo, in Peptides and Peptide-based Biomaterials and their Biomedical Applications, Eds. A. Sunna, A. Care, P. Bergquist, *Springer International Publishing AG*, Cham.
4. "Multifunctional Gold Nanocarriers for Cancer Theranostics – From bench to bedside and back again?" **João Conde***, F. Tian, P.V. Baptista., J.M. de la Fuente. in Nano-Oncologicals: New Targeting and Delivery Approaches (2014), *Springer Science+Business Media. Controlled Release Society*.
5. "RNA Quantification Using Noble Metal Nanoprobes: Simultaneous Identification of Several Different mRNA Targets Using Colour Multiplexing and Application to Cancer Diagnostics." **João Conde**, G. Doria, J.M. de la Fuente and P.V. Baptista*. Nanoparticles in Biology and Medicine: Methods and Protocols Series (2012). *Humana Press, Springer Protocols*.

CONFERENCE & SEMINAR PRESENTATIONS

- Keynote Speaker - 13º Encontro Nacional de Química Orgânica/6º Encontro Nacional de Química Terapêutica (13ENQO/6ENQT), January 2020, Portugal.
- Seminar, March 2017, University of Glasgow, Institute of Molecular Cell and Systems Biology, Glasgow, Scotland (*Invited*).
- Nanomedicine Seminars, February 2017, Trinity College Dublin, School of Medicine, Dublin, Ireland (*Invited*).

- 10th World Biomaterials Congress, May 2016, Montreal, Canada.
- 11th Annual Broad Retreat - Broad Institute of MIT and Harvard, December 2015, Boston, Massachusetts, USA.
- Society for Biomaterials 2015, April 2015, North Carolina, USA.
- 4th International Conference on Multifunctional, Hybrid and Nanomaterials, March 2015, Barcelona, Spain.
- 8th International Conference of Coelenterate Biology, December 2013, North Beach, Eilat, Israel.
- Collaborative Congress of the European Society for Gene and Cell Therapy and the Spanish Society for Gene and Cell Therapy, October 2013, Madrid, Spain.
- International Conference on Materials for Advanced Technologies 2013. Symposium R: Ecological and Health Impact of Nanomaterials and Nanotechnology, July 2013, Singapore.
- European Conference of Human Genetics 2013, June 2013, Paris, France.
- E-MRS 2013 SPRING MEETING, Bionanomaterials for imaging, sensing and actuating, May 2013, Strasbourg, France.
- Elsevier 3rd International Conference on Multifunctional, Hybrid and Nanomaterials (Hybrid Materials 2013), March 2013, Sorrento, Italy.
- Materials Research Society Fall Meeting, November 2012, Boston, Massachusetts, USA.
- NanoMed2012, International Conference on Nanotechnology in Medicine, November 2012, University College London, London, UK.
- American Chemical Society Spring 2012 National Meeting, March 2012, San Diego, California, USA.
- Miami 2012 Winter Symposium: Nanotechnology in Biomedicine, February 2012, Miami, USA.
- SPIE West 2012, San Francisco, USA.
- SPIE West 2011, Colloidal Quantum Dots/Nanocrystals for Biomedical Applications VI, February 2011, San Francisco, USA.
- TNT2010 – Trends in Nanotechnology, September 2010, Braga, Portugal.
- National Congress MicroBiotec'09, 2009, Vilamoura, Portugal.
- EURONANOFORUM 2009. Nanotechnology for Sustainable Economy. European and International Forum on Nanotechnology, June 2009, Prague, Czech Republic.
- XXXIV Genetic Journeys - Human Cancer Genetics and Genotoxicity, Portuguese Society of Human Genetics, 2009, Lisbon, Portugal.