

# Helena Gonçalves

Helena M.R. Gonçalves have Bachelor, MSc and PhD degrees in Chemistry and a specialization in Medical Sciences. Her chemistry formation was obtained at Faculdade de Ciências da Universidade do Porto and the Medical Sciences at Instituto de Ciências Biomédicas Abel Salazar. Her major research area has always been related with the synthesis of nanoparticles and organic molecules for biological and environmental applications. In the final graduation year she started her journey with fluorescence and nanoparticles. The Master project was focused on synthesis and functionalization of nanoparticles for sensing applications. The PhD research focused on the development of new non-toxic nanoparticles, Carbon Dots, their immobilization and potential cytotoxicity. The work developed allowed her to publish the first Portuguese paper on Cdots as first author, that has been highly cited through the years. After the PhD she integrated different multidisciplinary teams in laboratories across the country. The knowledge acquired over the years allowed her the publication of numerous other papers, participation in conferences and the establishment of scientific collaborations. The work performed so far enabled her to publish 30 papers in peer-reviewed international journals, 4 of the papers were cover pictures and 2 received highlights in Advanced Science News, 3 patents, two national and one international, 1 prize by the António Manuel da Mota foundation for efforts in the development of a biosensor for SARS-CoV-2. Additionally she attended several international/national conferences and perform requested manuscripts revisions (h index=12 with 1477 citations 1055 of which from 2015, according to google scholar at 24/02/2021). Recently she was invited to supervise 5 master students, three in UTAD (that have now submitted the thesis for evaluation) and two in ISEP (that have completed the degree); and two PhD student one at UTAD and one at ICBAS that were granted PhD scholarship by FCT in highly. In 2020 and 2015 she supervised undergraduate reports of two students and from 2019-2021 she supervised a BI scholarship under the project C.Cdot: Cdots for photodynamic therapy. She is also an active funding search researcher, and over the years she submitted projects to FCT, as both PI or Co-PI, that have been well rated, but not yet approved for funding. Additionally she submitted 2 proposals for the La Caixa foundation and 3 FET-Open projects in 2019, 2020 and 2021, as PI, with an international consortium that she organized personally through the contacts that have made over my research years. Even though they were not approved for funding they were well rated. Additionally she is the REQUIMTE PI in three FCT funded projects: CdotsBiosensingCovid19 (2020), SOLPOWINS (2020) and TrunkBioCode (2020). In all the projects she is responsible for tasks that include the development of new nanoparticles and their further modification in order to provide an innovative biosensing/energy efficient approach to a given problem.

## Identification

### Personal identification

Full name

Helena Gonçalves

Gender

Female

Birth date

1981/04/28

### Citation names

Gonçalves, Helena

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### Author identifiers

Ciência ID

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## Knowledge fields

Engineering and Technology - Nano-technology

## Languages

Language	Speaking	Reading	Writing	Listening	Peer-review
English	Advanced (C1)	Advanced (C1)	Advanced (C1)	Advanced (C1)	
French	Beginner (A1)	Beginner (A1)	Beginner (A1)	Beginner (A1)	

## Education

	Degree	Classification
2019/11/06 - 2019/11/08 Concluded	Course Atomic Force Microscopy applied to Life Sciences   2nd Ed (Outros) Major in Atomic Force Microscopy  Universidade do Porto Instituto de Investigação e Inovação em Saúde, Portugal	aprovado
2013 Concluded	Doctoral Program in Chemistry (Doutoramento)  Universidade do Porto Faculdade de Ciências, Portugal <i>"Analytical Applications of Fluorescent Carbon Dots"</i> ( <i>THESIS/DISSERTATION</i> )	Approved
2009 Concluded	Post Graduate course in Forensic Medical Sciences (Especialização pós-bacharelato)  Universidade do Porto Instituto de Ciências Biomédicas Abel Salazar, Portugal <i>"Não aplicável"</i> ( <i>THESIS/DISSERTATION</i> )	Sixteen Values (16)

2008 Concluded	Master in Chemistry (Mestrado)  Universidade do Porto Faculdade de Ciências, Portugal <i>"Fluorescence Sensors: Ruthenium Complexes and Quantum Dots" (THESIS/DISSERTATION)</i>	Seventeen Values (17)
2007 Concluded	Chemistry (Licenciatura)  Universidade do Porto Faculdade de Ciências, Portugal <i>"Synthesis and Characterization fo Ruthenium (II) and Osmium (II) Luminescent Complexes for pH sensing "</i> <i>(THESIS/DISSERTATION)</i>	Eleven Values (11)

## Affiliation

### Science

	Category Host institution/organization	Employer
2019/01/07 - Current	Contracted Researcher (Research) REQUIMTE LAQV Porto, Portugal	REQUIMTE LAQV Porto, Portugal
2017/11/01 - 2019/01/06	Postdoc (Research) Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal	Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal
2014 - 2015	Postdoc (Research) Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal	Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal
2013 - 2014	Postdoc (Research) Instituto Politécnico de Bragança Escola Superior de Tecnologia e Gestão, Portugal	Instituto Politécnico de Bragança Escola Superior de Tecnologia e Gestão, Portugal
2013 - 2013	Contracted Researcher (Research) Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal	Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal
2012 - 2013	Researcher (Research) Universidade do Porto Instituto de Biologia Molecular e Celular, Portugal	Universidade do Porto Faculdade de Ciências, Portugal

2009 - 2013	Contracted Researcher (Research) Universidade do Porto Faculdade de Ciências, Portugal	Associação para a Inovação e Desenvolvimento da FCT, Portugal
2008 - 2009	Contracted Researcher (Research) Universidade do Porto Faculdade de Ciências, Portugal	Universidade do Porto Faculdade de Ciências, Portugal

## Others

	Category Host institution/organization	Employer
2020/12/18 - 2020/12/18	Seminar on Nanoparticles Medical Applications Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal	Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal
2019/12/11 - 2019/12/11	Seminar on Nanoparticles and their Biomedical Applications Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal	Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal
2019/12/04 - 2019/12/04	Seminar on Nanoparticles and their Medical Applications Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal	Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal
2019/05/04 - 2019/05/04	Seminar on Nanoparticles and their Biomedical Applications Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal	Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal
2018/12/05 - 2018/12/05	Seminar on Nanoparticles and their Biological Applications Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal	Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal

## Projects

### Grant

Designation	Funders
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2017/11/01 - 2019/01/06	Dispositivos electrocrómicos luminescentes baseados em electrólitos (bio)híbrido orgânicos/inorgânicos PTDC/CTM-NAN/0956/2014  Post-doc Fellow Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal	Concluded
2017/11 - 2019/01	Dispositivos electrocrómicos luminescentes baseados em electrólitos (bio)híbrido orgânicos/inorgânicos PTDC/CTM-NAN/0956/2014	N/A, Portugal
2012/03/01 - 2015/06	Biosensor Development for Wine Traceability in the Douro Region (WineBioCode) <a href="https://info.eu-repo/grantAgreement/FCT/COMPETE/117341/PT">info:eu-repo/grantAgreement/FCT/COMPETE/117341/PT</a>  Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal	Universidade do Algarve Faculdade de Ciências e Tecnologia, Portugal
2013/10/01 - 2014/11/30	NORTE-07-0124-FEDER-000015 <a href="https://info.eu-repo/grantAgreement/FCT/COMPETE/117341/PT">NORTE-07-0124-FEDER-000015</a>  Post-doc Fellow Instituto Politécnico de Bragança Escola Superior de Tecnologia e Gestão, Portugal	Concluded
2012/03/01 - 2013/09	Biosensor Development for Wine Traceability in the Douro Region (WineBioCode) <a href="https://info.eu-repo/grantAgreement/FCT/COMPETE/117341/PT">info:eu-repo/grantAgreement/FCT/COMPETE/117341/PT</a>  Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal	Universidade do Algarve Faculdade de Ciências e Tecnologia, Portugal Concluded
2009/03/01 - 2013/02/28	SFRH / BD / 46406 / 2008 grant SFRH / BD / 46406 / 2008  PhD Student Fellow Universidade do Porto Faculdade de Ciências, Portugal	Concluded
2008/01/01 - 2009/02/01	SenRONS - Development of optical fiber sensors for the determination of reactive oxygen (ROS) and nitrogen (RNS) species in biological systems. <a href="https://info.eu-repo/grantAgreement/FCT/5876-PPCDTI/71001/PT">info:eu-repo/grantAgreement/FCT/5876-PPCDTI/71001/PT</a>  Universidade do Porto Faculdade de Ciências, Portugal	Universidade do Algarve Faculdade de Ciências e Tecnologia, Portugal Concluded

**Contract**

	Designation	Funders
2022 - Current	Nanofluid-based on Carbon Dots for Two-photon Activated Photodynamic Therapy 2022.04199.CEECIND  Principal investigator REQUIMTE LAQV Porto, Portugal	Associação para a Inovação e Desenvolvimento da FCT, Portugal  Ongoing
2021/03/29 - Current	Plataformas de Diagnóstico aplicadas às Doenças do Lenho em Videira <a href="#">PTDC/BAA-DIG/1079/2020</a>  Principal investigator REQUIMTE LAQV Porto, Portugal	Associação para a Inovação e Desenvolvimento da FCT, Portugal  Ongoing
2021/03/29 - Current	Janelas Inteligentes Accionadas pelo Sol para Edifícios Sustentáveis <a href="#">PTDC/CTM-REF/4304/2020</a>  Principal investigator REQUIMTE LAQV Porto, Portugal	Associação para a Inovação e Desenvolvimento da FCT, Portugal  Ongoing
2020/05/01 - 2020/08/31	CdotsBiosensingCovid-19 <a href="#">Projeto n. 041</a>  Principal investigator REQUIMTE LAQV Porto, Portugal	Associação para a Inovação e Desenvolvimento da FCT, Portugal  Concluded

**Other**

	Designation	Funders
2019/01/07 - Current	C.Cdot - Carbon Dots as effective agents in photodynamic therapy PTDC/BTM-MAT/30858/2017  Researcher REQUIMTE LAQV Porto, Portugal	Ongoing
2012/04/01 - 2013/02/28	TARGETS - TARgeted GEne Therapy Strategies to treat nerve injury PTDC/CTM-NAN/115124/2009  Researcher Universidade do Porto Instituto de Biologia Molecular e Celular, Portugal	Concluded

**Outputs**

## Publications

Conference  
abstract

- 1 Helena M.R. Gonçalves. "Exploring Drug-DNA-Carbon Dots Binding for Electrochemical Sensing". Paper presented in *70th Annual Meeting of the International Society of Electrochemistry, Durban, 2019*.  
Accepted
- 2 Helena M.R. Gonçalves. "On Chondroitin Sulfate/ Citric Acid Electrolytes as a New Electrolyte Material". Paper presented in *SPQ XXVI Meeting 2019, Porto, 2019*.  
Accepted
- 3 Gonçalves, Helena. "Near-infrared emitting sol-gel derived electrolytes for energy-efficient electrochemical windows". Paper presented in *Hyceltec, Barcelona, 2019*.  
Published
- 4 Helena M.R. Gonçalves. "Carrageenan-based electrolytes containing neodymium triflate". Paper presented in *E-MRS 2019 Spring Meeting, Nice, 2019*.  
Accepted
- 5 Buiculescu, Raluca; Chaniotakis, Nikos A.. "Carbon Dots Functionalized with Ionic Liquids for Highly Effective Proton Transport". Paper presented in *ISPE16, Yokohama, 2018*.  
Accepted · 10.1109/smicnd.2012.6400690
- 6 Helena M.R. Gonçalves. "Green emitting environmentally friendly IL-modified chitin-derived carbon dots for sustainable energy-efficient devices". Paper presented in *ACIN2018, Namur, 2018*.  
Accepted
- 7 Helena M.R. Gonçalves. "Different Biosensor DNA-based platforms for wine authenticity: a comparative study". Paper presented in *International conference of grapevine and wine sciences, Logrono, 2018*.  
Accepted
- 8 Helena M.R. Gonçalves. "Highly sensitive label-free DNA sensor based on LPGs". Paper presented in *4th International Conference on Bio-Sensing Technology, Lisboa, 2015*.  
Accepted
- 9 Helena M.R. Gonçalves. "Label Free Biosensor and HRM used in SNP detection in *Vitis vinifera* L. for Authenticity Purposes". Paper presented in *XXXIX Jornadas Portuguesas de Genética, National Scientific Meeting, Braga, 2015*.  
Accepted
- 10 Helena M.R. Gonçalves. "A autenticidade dos vinhos do Douro". Paper presented in *Open Day of Knowledge National Scientific Meeting, Vila Real, 2015*.  
Accepted
- 11 Helena M.R. Gonçalves. "A impressão digital dos vinhos do Douro: da vinha ao vinho". Paper presented in *. Alto Douro Vinhateiro – Território de Ciência e Cultura UNESCO, National Scientific Meeting, Vila Real, 2014*.  
Accepted
- 12 Helena M.R. Gonçalves. "DNA-based applications for wine authenticity". Paper presented in *Workshop "Molecular and Analytical wine varietal authentication", Siena, 2014*.  
Accepted

- 13 Yoshizawa, André Danjiro; Fusco, Solange. "A autenticidade do vinho: um processo integrado e multidisciplinar.". Paper presented in *4thInfowine.forum , National Scientific Meeting, Vila Real, 2014.*  
Accepted · 10.17648/enipe-2017-58614
- 14 Helena M.R. Gonçalves. "LPG based Biosensor for Label-Free DNA Detection and Quantification". Paper presented in *Europtrode XII International Conference, Atenas, 2014.*  
Accepted
- 15 Helena M.R. Gonçalves. "Optimization of an optical biosensor for detection of DNA extracted from *Vitis vinifera* L". Paper presented in *VI Jornadas Nacionais de Genética e Biotecnologia, National Scientific Meeting, Vila Real, 2014.*  
Accepted
- 16 Helena M.R. Gonçalves. "O que estamos a beber? Uma análise multidisciplinar e integrada". Paper presented in *National Meeting, Vila Real, 2014.*  
Accepted
- 17 Helena M.R. Gonçalves. "Label-free DNA Detection and Quantification Method based on Functionalized LPGs". Paper presented in *6th International Symposium on Recent Advances in Food Analysis, Praga, 2013.*  
Accepted
- 18 Helena M.R. Gonçalves. "Grapevine (*Vitis vinifera* L.) traceability strategies: an integrated approach". Paper presented in *Students Chapter National Scientific Meeting in Faculdade de Ciências da Universidade do Porto, Porto, 2013.*  
Accepted
- 19 Helena M.R. Gonçalves. "Silica dots vs. Carbon dots as fluorescence nanosensors". Paper presented in *10th National Meeting on Photochemistry/ENF2010 – SPQ, Porto, 2010.*  
Accepted
- 20 Helena M.R. Gonçalves. "Synthesis of fluorescent nanomaterials as nanosensors". Paper presented in *10th National Meeting on Photochemistry/ENF2010, Porto, 2010.*  
Accepted
- 21 Kokai, Fumio; Yamamoto, Kazuhiro; Koga, Yoshinori. "Luminescent Carbon Dots Obtained by Laser Ablation for Detection of Hg(II)". Paper presented in *Europtrode X, International Conference, Praga, 2010.*  
Accepted · 10.1117/12.376965
- 22 Helena M.R. Gonçalves. "Steady-state and Time-resolved Fluorescence Analysis of CdTe Quantum Dots in Polar Solvents.". Paper presented in *Europtrode X, International Conference, Praga, 2010.*  
Accepted
- 23 Yust, Brian G.; Chipara, Mircea; Saenz, Aaron. "Synthesis and Functionalization of Carbon Nanoparticles for Sensing Applications". Paper presented in *SEON 2009 International Conference, Lisboa, 2009.*  
Accepted · 10.1117/12.2213284
- 24 Jorge, P. A. S; Maule, Cesar; Rodrigues, Helena; Esteves da Silva, Joaquim C.G.; Farahi, F.. "Optical fibre sensing and analytical imaging with semiconductor nanocrystals". Paper presented in *ICTON '09, 11th International Conference, S. Miguel, Açores, 2009.*  
Accepted · 10.1109/icton.2009.5185001

- 25 Helena M.R. Gonçalves. "Quantum dots bioimaging applications". Paper presented in *Students Chapter a National Scientific Meeting, Porto*, 2008.  
Accepted
- 26 Helena M.R. Gonçalves. "Steady state and lifetime chemical sensors based on Ruthenium complexes". Paper presented in *IJUP2008 National Scientific Meeting, Porto*, 2008.  
Accepted
- 27 Helena M.R. Gonçalves. "Polypyridil Complexes of Osmium(II) and Ruthenium (II) for optical fiber pH sensing". Paper presented in *Eurotrode International Conference, Dublin*, 2008.  
Accepted
- 28 Helena M.R. Gonçalves. "Quantum dots for sensing and medical imaging applications". Paper presented in *SEON International Conference 2008, Aveiro*, 2008.  
Accepted
- 29 Helena M.R. Gonçalves. "Ratiometric sensing and imaging with CdTe semiconductor nanocrystals". Paper presented in *SEON International Conference 2008, Aveiro*, 2008.  
Accepted
- 30 Helena M.R. Gonçalves. "Fiber optic pH sensors based on CdTe quantum dots". Paper presented in *IJUP2008 National Scientific, Porto*, 2008.  
Accepted
- 31 Helena M.R. Gonçalves. "Ruthenium(II) Fluorescent Complexes Sensitive to pH". Paper presented in *SPQ.An07 International Conference, Lisboa*, 2007.
- 32 Helena M.R. Gonçalves. "Ruthenium Luminescent Complexes for Lifetime based pH Sensing". Paper presented in *SEON International Conference 2007, Aveiro*, 2007.  
Accepted

## Journal article

- 1 Sérgio Santos-Silva; Helena M. R. Gonçalves; António Rivero-Juarez; Wim H. M. Van der Poel; Maria São José Nascimento; João R. Mesquita. "Detection of hepatitis E virus in milk: Current evidence for viral excretion in a wide range of mammalian hosts". *Transboundary and Emerging Diseases* (2022): <https://doi.org/10.1111/tbed.14683>.  
10.1111/tbed.14683
- 2 A. Lino; M. A. Cardoso; P. Martins-Lopes; H. M. R. Gonçalves. "Cover Image". *Reviews in Medical Virology* (2022): <https://doi.org/10.1002/rmv.2377>.  
10.1002/rmv.2377
- 3 Alexandra Lino; Marita A. Cardoso; Helena M. R. Gonçalves; Paula Martins-Lopes. "SARS-CoV-2 Detection Methods". *Chemosensors* (2022): <https://doi.org/10.3390/chemosensors10060221>.  
10.3390/chemosensors10060221
- 4 A. Lino; M. A. Cardoso; P. Martins-Lopes; H. M. R. Gonçalves. "Omicron – The new SARS-CoV-2 challenge?". *Reviews in Medical Virology* (2022): <https://doi.org/10.1002/rmv.2358>.  
10.1002/rmv.2358

- 5 Cardoso, Marita A.; Duarte, Abel J.; Gonçalves, Helena M.R.. Corresponding author: Gonçalves, Helena M.R.. "Carbon dots as Reactive Nitrogen Species nanosensors". *Analytica Chimica Acta* (2022): 339654. <http://dx.doi.org/10.1016/j.aca.2022.339654>.  
10.1016/j.aca.2022.339654
- 6 Gonçalves, Helena M.R.; Tavares, Isabel S.; Neves, Susana A.F.; Fontes, Rui; Duarte, Abel J.. Corresponding author: Gonçalves, Helena M.R.. "Turn-on, photostable, nontoxic and specific, iron(II) sensor". *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 265 (2022): 120380. <http://dx.doi.org/10.1016/j.saa.2021.120380>.  
10.1016/j.saa.2021.120380
- 7 Cardoso, Marita A.; Correia, Sandra F. H.; Gonçalves, Helena M. R.; Pereira, Rui F. P.; Pereira, Sónia; Maria, Teresa M. R.; Silva, Maria M.; et al. "Solar spectral management with electrochromic devices including PMMA films doped with biluminescent ionosilicas". *Journal of Sol-Gel Science and Technology* 101 1 (2021): 58-70. <http://dx.doi.org/10.1007/s10971-021-05612-z>.  
10.1007/s10971-021-05612-z
- 8 Vanessa S.D. Gomes; Helena M.R. Gonçalves; Renato E.F. Boto; Paulo Almeida; Lucinda V. Reis. "Barbiturate squaraine dyes as fluorescent probes for serum albumins detection". *Journal of Photochemistry and Photobiology A: Chemistry* (2020): 112710-112710. <https://doi.org/10.1016/j.jphotochem.2020.112710>.  
10.1016/j.jphotochem.2020.112710
- 9 Helena M. R. Gonçalves; Rui F. P. Pereira; Emmanuel Lepleux; Louis Pacheco; Artur J. M. Valente; Abel J. Duarte; Verónica Zea Bermudez. "Non-Newtonian Thermosensitive Nanofluid Based on Carbon Dots Functionalized with Ionic Liquids". *Small* (2020): 1907661-1907661. <https://doi.org/10.1002/smll.201907661>.  
10.1002/smll.201907661
- 10 Tânia C. D. Fernandes; Helena M. R. Rodrigues; Filipe A. A. Paz; Joana F. M. Sousa; Artur J. M. Valente; Maria M. Silva; Verónica de Zea Bermudez; Rui F. P. Pereira. "Highly Conducting Bombyx mori Silk Fibroin-Based Electrolytes Incorporating Glycerol, Dimethyl Sulfoxide and [Bmim]PF6". *Journal of The Electrochemical Society* (2020): <https://doi.org/10.1149/1945-7111/ab8313>.  
10.1149/1945-7111/ab8313
- 11 Helena M. R. Gonçalves; Susana A. F. Neves; Abel Duarte; Verónica de Zea Bermudez. "Nanofluid Based on Carbon Dots Functionalized with Ionic Liquids for Energy Applications". *Energies* 13 3 (2020): 649-649. <https://doi.org/10.3390/en13030649>.  
10.3390/en13030649
- 12 Cardoso, M.A.; Correia, S.F.H.; Frias, A.R.; Gonçalves, H.; Pereira, R.F.P.; Nunes, S.C.; Armand, M.; et al. "Solar spectral conversion based on plastic films of lanthanide-doped ionosilicas for photovoltaics: down-shifting layers and luminescent solar concentrators". *Journal of Rare Earths* (2020): <http://dx.doi.org/10.1016/j.jre.2020.01.007>.  
Published · 10.1016/j.jre.2020.01.007
- 13 Santos, F.M.; Barbosa, P.C.; Pereira, R.F.P.; Silva, M.M.; Gonçalves, H.M.R.; Nunes, S.C.; Figueiredo, F.L.; Valente, A.J.M.; de Zea Bermudez, V.. "Proton conducting electrolytes composed of chondroitin sulfate polysaccharide and citric acid". *European Polymer Journal* 124 (2020): <http://www.scopus.com/inward/record.url?eid=2-s2.0-85077807834&partnerID=MN8TOARS>.  
10.1016/j.eurpolymj.2019.109453

- 14 Gonçalves, Helena; Nunes, S.C.; Fernandes, M.; Gonçalves, H.M.R.; Serrano, J.L.; Almeida, P.; Bermudez, V.Z.. "Di-urea cross-linked siloxane hybrid materials incorporating oligo(oxypropylene) and oligo(oxyethylene) chains". *Journal of Sol-Gel Science and Technology* (2020): <http://www.scopus.com/inward/record.url?eid=2-s2.0-85083891092&partnerID=MN8TOARS>.  
Accepted · 10.1007/s10971-020-05272-5
- 15 Gonçalves, Helena. "Silk Fibroin-based Electrolytes incorporating Glycerol, Dimethyl Sulfoxide and [Bmim]PF<sub>6</sub>". *Journal of The Electrochemical Society* (2020):  
Under revision
- 16 Helena M.R. Gonçalves; Gonçalves, M.C.; Pereira, R.F.P.; Alves, R.; Nunes, S.C.; Fernandes, M.; Gonçalves, H.M.R.; et al. "Electrochromic Device Composed of a Di-urethanesil Electrolyte Incorporating Lithium Triflate and 1-Butyl-3-methylimidazolium Chloride". *Frontiers* 7 (2020): <http://www.scopus.com/inward/record.url?eid=2-s2.0-85086155642&partnerID=MN8TOARS>.  
Accepted · 10.3389/fmats.2020.00139
- 17 Helena M. R. Gonçalves; Rui F. P. Pereira; Emmanuel Lepleux; Thomas Carlier; Louis Pacheco; Sónia Pereira; Artur J. M. Valente; et al. "Nanofluid Based on Glucose-Derived Carbon Dots Functionalized with [Bmim]Cl for the Next Generation of Smart Windows". *Advanced Sustainable Systems* (2019): 1900047-1900047. <https://doi.org/10.1002/adsu.201900047>.  
10.1002/adsu.201900047
- 18 Barroso, M.F.; Silva, R.J.A.; Moreira, S.F.; Rodrigues, S.S.; Gonçalves, H.M.R.; Duarte, A.J.. "Can Luminol Be a Fluorophore?". *Journal of Fluorescence* (2019): <http://www.scopus.com/inward/record.url?eid=2-s2.0-85063226978&partnerID=MN8TOARS>.  
10.1007/s10895-019-02362-8
- 19 Cardoso, M.A.; Pereira, R.F.P.; Pereira, S.; Gonçalves, H.; Silva, M.M.; Carlos, L.D.; Nunes, S.C.; et al. "Correction to: Three-Mode Modulation Electrochromic Device with High Energy Efficiency for Windows of Buildings Located in Continental Climatic Regions (Advanced Sustainable Systems, (2019), 3, 3, (1800115), 10.1002/adsu.201800115)". *Advanced Sustainable Systems* 3 7 (2019): <http://www.scopus.com/inward/record.url?eid=2-s2.0-85069959405&partnerID=MN8TOARS>.  
10.1002/adsu.201900057
- 20 Oliveira, R.; Amaro, F.; Azevedo, M.; Vale, N.; Gonçalves, H.; Antunes, C.; Rego, R.. "New voltammetric and spectroscopic studies to quinacrine-DNA-Cdots interaction". *Electrochimica Acta* 306 (2019): 122-131. <http://www.scopus.com/inward/record.url?eid=2-s2.0-85063609823&partnerID=MN8TOARS>.  
10.1016/j.electacta.2019.03.068
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**Intellectual property**

## Patent

- 1 I. Duarte A., Gonçalves H., Martins-Lopes P. "Fluorescence-based biosensor for SARS-CoV-2 detection and quantification".. 2022. "Fluorescence-based biosensor for SARS-CoV-2 detection and quantification". (2021)".

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application for  
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- 1 2021. "Fluorescence-based biosensor for SARS-CoV-2 detection and quantification". (2021) (ref. PPP 198) - PPP".
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- 3 2019. "Label-free nucleic acid and proteins detection technology based on raw Cdots (ref. PPI 61719)".
- 4 2015. "Label-free fiber optic biosensor for DNA quantification (ref. P312.6 PP)".

## Activities

### Supervision

	Thesis Title Role	Degree Subject (Type) Institution / Organization
2021/07/30 - Current	Ruminant HEV: ascertaining novel Hepatitis E virus in domestic, food-producing animal reservoirs Co-supervisor	Doutoramento em Ciências Veterenárias (PhD) Universidade do Porto Instituto de Ciências Biomédicas Abel Salazar, Portugal
2021/01/01 - Current	Molecular Diagnostic Tools targeting on-site Grape Trunk Diseases Detection Co-supervisor of Filipe Miguel Azevedo Nogueira	Doutoramento em Genética Molecular Comparativa, na Universidade de Trás-os-Montes e Alto Douro (PhD) Universidade de Trás-os-Montes e Alto Douro, Portugal
2020/09/01 - Current	In vitro and In vivo toxicity evaluation of Carbon nanoparticles Co-supervisor of Luis Faria Sousa	Biocnologia para as Ciências da Saúde (Master) Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal
2018/09/01 - Current	Nanoengenharia de Quantum Dots, QDs, Fluorescentes de Cádmio/Telúrio, CdTe, com ADN: Estratégias de Funcionalização e Avaliação Co-supervisor	Mestrado em Engenharia Química (Master) REQUIMTE LAQV Porto, Portugal
2020/09/01 - 2022/07	New fluorescence-based biosensor for detection and quantification of Colletotrichum acutatum in infected olive and olive oil Co-supervisor of Giovanna Calvão	Engenharia Alimentar (Master) Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal
2020/09/01 - 2022/04	New fluorescence-based biosensor for SARS-Cov-2 detection Co-supervisor of Alexandra Rodrigues Lino	Genética Molecular Comparativa e Tecnológica (Master) Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal
2020/09/01 - 2021/07/19	Avaliação in vitro da toxicidade e aplicabilidade de Nanopartículas de Carbono em Terapia Fotodinâmica (PDT) Co-supervisor of Sabela Rodriguez Reino	Mestrado de Engenharia Química (Master) Instituto Politécnico do Porto Instituto Superior de Engenharia do Porto, Portugal
2020/09/01 - 2021	Aplicabilidade energética dos Carbon dots e da fluoresceinamina como sensor específico para o Fe(II)	Mestrado em Engenharia Química (Master) Instituto Politécnico do Porto Instituto

Co-supervisor	Superior de Engenharia do Porto, Portugal
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2020/02/18 - 2020/08/31	Avaliação in vivo da toxicidade de nanopartículas em <i>Drosophila melanogaster</i> Supervisor of Bruna Daniela Pereira Cunha	Biologia (Degree) Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal
2015/09 - 2016/07	Study of the effect of the DNA hybridization process on the spectral behaviour of an optical biosensor Co-supervisor	Genetics and Biotechnology (Degree) Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal

## Event organisation

Event name Type of event (Role)	Institution / Organization
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2021/02/17 - 2021/02/27	Workshop entitled: "Nanoparticles Construction, Synthesis and Characterization". (2021/02/17 - 2021/02/27) Workshop (Co-organisor)	Instituto Politécnico do Porto Instituto Superior de Engenharia do Porto, Portugal
2019/03/13 - 2019/03/17	Organização de um workshop intitulado: "SILK, AN EXCITING MATERIAL" no âmbito das XI Jornadas de Genética e biotecnologia. Neste workshop participaram 16 estudantes. Realizou-se em Vila Real, no complexo de laboratórios da Universidade de Trás-os-Montes e Alto Douro (2019/03/13 - 2019/03/17) Workshop (Co-organisor)	Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal

## Jury of academic degree

Theme Role	Candidate name (Type of degree) Institution / Organization
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2022/04/06	Detection of Non-Small Cell Lung Cancer Using a DNA Based Biosensor (Thesis) Main arguer	Catarina Rodrigues Lino (Master) Universidade de Trás-os-Montes e Alto Douro Centro de Investigação e de Tecnologias Agro-Ambientais e Biológicas, Portugal
2022/04/05	New Fluorescence-Based Biosensor For SARS-CoV-2 Detection Supervisor	Alexandra Rodrigues Lino (Master) Universidade de Trás-os-Montes e Alto Douro Centro de Investigação e de Tecnologias Agro-Ambientais e Biológicas, Portugal

2021/07/19	Avaliação in vitro da toxicidade e aplicabilidade de Nanopartículas de Carbono em Terapia Fotodinâmica (PDT) Supervisor	Sabela Rodriguez Reino (Master) Instituto Politécnico do Porto Instituto Superior de Engenharia do Porto, Portugal
2021	Aplicabilidade energética dos Carbon dots e da fluoresceinamina como sensor específico para o Fe(II) Supervisor	Susana Alexandra Fernandes Neves (Master) Instituto Politécnico do Porto Instituto Superior de Engenharia do Porto, Portugal
2020/08/27	GOLD NANOPARTICLE – ANTIBODY INTERACTION STUDIES BY NANOPARTICLE TRACKING ANALYSIS. (Thesis) Main arguer	ANANYA REDDY (Master) Universidade do Porto Faculdade de Ciências, Portugal
2017/12/13	Effect of the probe structure design in the biosensor response: the case of Vitis vinifera L (Thesis) Main arguer	Sara Mourão Barrias (Master) Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal
2014/12/16	Application of Magnetic Nanoparticles in Hyperthermia (Thesis) Main arguer	Stephan dos Santos Cunha (Master) Instituto Politécnico de Bragança Escola Superior de Tecnologia e Gestão, Portugal
2013/12/19	Characterization of DNA hybridization procedures using an optical biosensor (Thesis) Main arguer	Luís Miguel de Aquino Moreira (Master) Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal

## Course / Discipline taught

	Academic session	Degree Subject (Type)	Institution / Organization
	2020/07/01 - 2020/07/07	Detection of SARS-Cov2 through a biosensor	Master in Molecular and Comparative Genetics and Technology Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal
	2020/07/01 - 2020/07/07	Laboratórios em Genética Molecular Comparativa e Tecnológica do Mestrado em Genética Molecular Comparativa e Tecnológica	Genética Molecular Comparativa e Tecnológica (Mestrado integrado) Universidade de Trás-os-Montes e Alto Douro Escola de Ciências da Vida e do Ambiente, Portugal
	2019/11/19 - 2019/12/03	Unidade Curricular: Biomateriais I  Curso: Licenciatura em Bioengenharia  Docente responsável: Professora Verónica de Zea	Licenciatura em Bioengenharia (Licenciatura) Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal

Bermudez

Aulas (Ensino prático e laboratorial): AFM e POM de uma sutura 12 e 19 novembro (2 horas cada); AFM casulos 26 nov e 3 dez (2 horas cada)

2019/09/24 - 2019/11/12	Biomateriais avançados	Mestrado em Engenharia Biomédica (Curso de mestrado (conclusão do curso de especialização))	Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal
2019/04/12 - 2019/05/20	<p>Unidade Curricular: Biomateriais</p> <p>Curso: Mestrado em Engenharia Biomédica</p> <p>Docente responsável: Professora Verónica de Zea Bermudez</p> <p>Aulas (Ensino prático e laboratorial): Medidas de ângulo de contacto da superfície das folhas: 12 abril 2019 (2 horas); 3 de maio 2019 (2 horas); 20 de maio 2019 (2 horas)</p>	Mestrado em Engenharia Biomédica (Curso de mestrado (conclusão do curso de especialização))	Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal
2019/02/28 - 2019/04/04	<p>Unidade Curricular: Biomateriais II</p> <p>Curso: Licenciatura em Bioengenharia</p> <p>Docente responsável: Professora Verónica de Zea Bermudez</p> <p>Aulas (Ensino prático e laboratorial): Medidas de ângulo de contacto da superfície das folhas: 28 fevereiro 2019 (2 horas); 14 de março 2019 (2 horas); 21 de março 2019 (2 horas); 28 de março 2019 (2 horas); 29 de março 2019 (2 horas); 4 abril 2019 (2 horas);</p>	Licenciatura em Bioengenharia (Licenciatura)	Universidade de Trás-os-Montes e Alto Douro Centro de Química Vila Real, Portugal

## Journal scientific committee

	Journal title (ISSN)	Publisher
2022/03/31 - Current	Sensors (ISSN 1424-8220)	

## Distinctions

### Award

2020 Finalist of the prize from Fundação Manuel da Mota for the COVID-19 combat  
Fundação Manuel da Mota, Portugal

### Other distinction

2022 Cover Picture of Journal of Sol-Gel Science and Technology, 101 (1) (2022) 58-70  
Springer Nature Switzerland AG, Switzerland

2020 Cover Picture of the journal Small  
Small Journal da Wiley, Germany

2019 Cover Picture of the issue Advanced Sustainable Systems, 3(3) (2019) 18001151  
Advanced Sustainable Systems, Germany

2019 Cover Picture of the issue Advanced Sustainable Systems, 7 (2019) 1900047  
Advanced Sustainable Systems, Germany

2019 Highlight on Advanced Science News on the issue Advanced Sustainable Systems,  
7 (2019) 1900047  
Advanced Science News, Germany

2019 Highlight on Advanced Science News on the issue Advanced Sustainable Systems,  
3(3) (2019) 18001151  
Advanced Science News, Germany