

## **RUI L. REIS SHORT BIOGRAPHICAL SKETCH**

**June 2017**

Rui L. Reis is 50 years old and was born in Porto, Portugal (PT), where he still lives. Rui L. Reis PhD, DSc, Hon. Causa MD, FBSE, FTERM, member NAE, is a Full Professor of Tissue Engineering, Regenerative Medicine, Biomaterials and Stem Cells at the Department of Polymer Engineering, School of Engineering of University of Minho (UMinho). He is the Vice-Rector/Vice-President for Research of the University of Minho, Braga & Guimarães, Portugal. He is also the Director of the 3B's Research Group – Biomaterials, Biodegradables and Biomimetics at the U. Minho in Portugal ([www.3bs.uminho.pt](http://www.3bs.uminho.pt)), and the Director of the PT Government Associate Laboratory ICVS/3B's. Both 3B's and ICVS (Institute of Health and Life Sciences at the UMinho Medical School) are research units of Excellence, as evaluated by international panels of the Portuguese Foundation for Science and Technology (FCT). He is also, since 2000, the main responsible for LABMAT, the general materials characterization Lab. of U. Minho.

Rui L. Reis is the CEO of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine (TERM) that has 22 partners from 13 different countries. He directs the correspondent European Economic Interest Group (EEIG), being the main office registered in Portugal. The headquarters of this Institute are located in AvePark, Taipas - Guimarães, Minho, Portugal, in a 3600 m<sup>2</sup> state of the art unique facility fully designed for research in the TERM field. This building is also the home of the 3B's Research Group since July 2008. The installation of the 3B's and the headquarters of the Institute at AvePark were awarded the main innovation award for Northern Portugal (Prémio Novo Norte – Norte Inovador 2009) by the Northern Portugal regional coordination committee (CCDR-N) in May 2010. The same project was awarded the Grand Prize New North (Grande Prémio Novo Norte 2009) for best good practice in Northern Portugal for 2009 in all areas of activities. Rui Reis was also, from 2003-2009, Head of R&D for the Holding Corticeira Amorim SGPS, the world leading cork industrial company that is part of one of the major Portuguese controlled business groups with operations in around 100 countries world-wide. He co-funded different start-up companies originating from the research and activities of the 3B's research Group. Those include, among others, Stematters - where he was the Chairman and Chief Scientific Officer (CSO) from 2007 to 2015 and his presently a board member, and HydrUStent where he is Chairman and CSO since the start of the company in 2016.

Rui L. Reis education background includes: (i) a graduation in Metallurgical Engineering, U. Porto, Portugal, 1990, (ii) a Master degree by research on Materials Science and Engineering – Biomaterials – obtained in a joint program of the six major technical Universities in Portugal, awarded by U. Porto, Portugal, 1994 (iii) a PhD on Polymer Engineering – Biomaterials & Tissue

Engineering, U. Minho, Portugal, degree that was prepared in co-operation with Brunel University, London, UK, 1999, (iv) a Doctor of Science (D.Sc.) degree on Biomedical Engineering - Biomaterials & Tissue Engineering, by U. Minho, Portugal, 2007.

Rui L. Reis has been involved in biomaterials research since 1990. He has worked several periods abroad, in different Universities and companies. His main area of research is the development of biomaterials from natural origin polymers (starch, chitin, chitosan, casein, soy, algae based materials, silk fibroin, gellan gum, carragenan, hyaluronic acid, ulvan, xanthan, marine collagen, etc.) that in many cases his group originally proposed for a range of biomedical applications, including different medical devices, bone replacement and fixation, drug delivery carriers, partially degradable bone cements and tissue engineering scaffolding for a range of different tissues. Lately the research of his group has been increasingly focused on tissue engineering, regenerative medicine, stem cells and drug delivery applications. His research group works with bone marrow, adipose-derived, umbilical cord, amniotic origin and embryonic stem cells. The group has been working on the engineering of bone, cartilage, osteochondral, skin, intervertebral discs, meniscus, tendons and ligaments, and neurological tissues.

Furthermore, he has been responsible for several co-operation programs, with Universities and Companies in UK, The Netherlands, Spain, France, Finland, Germany, Italy, Croatia, Turkey, Ireland, Singapore, USA, Canada, South Korea, Japan, China, Thailand, Vietnam, Australia, New Zealand, etc.

He has been the co-coordinator of four major EU research project, funded under FP6 of the European Commission. One of the main projects was the STREP "HIPPOCRATES" that had a 3 MEuros budget. He also coordinated the only European Network of Excellence (NoE) on Tissue Engineering, "EXPERTISSUES". This highly funded NoE (budget of around 7.3 MEuros) was composed by 22 partners, several being industrial, from 13 countries, and is continuing to lead the way in all Tissue Engineering research in Europe. He has also coordinated the Marie Curie Early Stage Training Multi-site project "ALEA JACT EST" (total budget of 2.6 MEuros), as well as the Marie Curie Series of Conferences "InVENTS ", that had a budget of around 0.5 MEuros to prepare 6 cutting-edge research conferences (all in Portugal) and 3 practical training courses at the highest level on the respective research fields. He has also coordinated the large INTERREG Project PROTEUS, with a budget of 1.4 MEuros aimed to develop new materials for different applications based on marine resources from Northern Portugal and Galicia. He was also involved in the large scale FP7 project DISCREGENERATION, and on the FP7 projects BioHybrid and MultiScaleHuman (ITN). He coordinated five new strategic international, including 3 FP7, funded projects. Those were: the project FIND & BIND and the project SPECIAL, each one with a budget

of around 3.6 MEuros, the project POLARIS (an FP7 REGPOT with 3.1 MEuros of budget only for U. Minho), as well as a 2 cross-broadener large projects, IBEROMARE with a budget of around 2 MEuros and NOVOMAR with a budget of 0.9 MEuros, and an Euro-Atlantic project called MARMED, also with a budget of around 2 MEuros.

He is also the main responsible for several other projects funded by Portuguese, European and American biomaterials and polymeric industries and for a range of bi-lateral concerted actions. At only 46 years, he was awarded and ERC AdG (European Research Council Advanced Grant), the most prestigious grant available for European Researchers in all Europe, of 2.35 MEuros for his project ComplexiTE. The 3B's Research Group has two additional ERC Consolidator Grants (CoG) running with a budget of around 2 MEuros each.

Under HORIZON 2020 Rui L. Reis presently coordinates the ERA Chairs FoReCast grant (2.5 MEuros for 3B's-UMinho), as well as two TWINNING projects Gene2Skin and Chem2Nature (1 MEuros of budget each). He is also the scientific coordinator of the recently approved (only 10 projects in all Europe of this type were approved by the EC from 170 applications) 15 MEuros EC funded (6 MEuros of UMinho budget) TEAMING proposal, "The Discoveries Center for Regenerative and Precision Medicine" (with UCL - University College London, UPorto, UAveiro, ULisboa, UNova Lisboa). This project is also supported by FCT and by 3 regional authorities in Portugal (CCDR-N, CCDR-C, CCDR-LVT) and is supposed to have a total budget of around 100 MEuros in the coming 7 years, in order to create a new multi-campus Center of Excellence (CoE) in Portugal, with support from UCL in the UK. The new CoE will have headquarters in a new building to be connected to the present building of 3B's – UMinho in AvePark, Portugal. He is also involved as a partner in different HORIZON 2020 projects, including ELASTILET and coordinates or is involved in several ERA-NET and COST actions. He also coordinates a large international PhD program funded by FCT on TERM and stem cells, as well as two Structural Programs for hiring highly qualified researchers (around 7.8 MEuros) and a 850 kEuros project to support the above referred to TEAMING, the 3 of them funded by the Northern Portugal Coordination Regional Authority (CCDR-N).

At the present, he is the principal investigator (PI) of grants totalizing more than 40 MEuros of which around 25 MEuros are U. Minho funding. As a result of these projects and other projects he directed or is directing the work of more than 150 post-graduation researchers (at the present moment around 35 Post-docs and 50 PhD students) from Portuguese, Spanish, Swedish, Dutch, Slovak, Chinese, Bulgarian, Brazilian, German, Indian, Colombian, Venezuelan, Turkish, Italian, Cuban, Polish, Hungarian, USA, Belgium, UK, Irish, Chinese, Lebanese, Thai, Russian, Iranian, Syrian, and South Korean origin. He is involved on the Bioengineering Systems program of the

Portugal – MIT (Massachusetts Institute of Technology) initiative, being responsible for the biomaterials module. He is also the PI of a project in the Portugal – UTexas at Austin partnership and is involved in a collaboration project with Chonbuk National University, where he is Emeritus Invited Professor, funded by the South Korean government.

As a result of his academic activities Rui L. Reis has been awarded several prizes. Some of the most relevant ones were: (i) the ESAFORM 2001 Scientific Prize for his work on processing of starch-based biomaterials, (ii) the Jean LeRay Award 2002 by the European Society for Biomaterials for its outstanding contributions to the biomaterials field as a young scientist and (iii) the Stimulus to Excellence Award 2004 by the Portuguese Minister for Science and Technology for being one of the scientists with higher number of publications and citations in the Portuguese scientific arena (around 70 awardees - only 2 below 40 years old), (iv) the Pfizer Award for Clinical Research in 2007, (v) the START Innovation award in 2007, (vi) the yearly award of scientific merit of the University of Minho in 2010, (vii) an Honoris Causa degree in Medicine (making him an h.c MD) awarded in 2010 by the historical and highly respected University of Granada in Spain for his world-leading activities in the field of regenerative medicine, (viii) the George Winter Award by the European Society for Biomaterials (the main career and senior award in Biomaterials research in all Europe) that was presented in Dublin in September 2011, (ix) The Gold Medal of Scientific Merit from the City of Guimarães, in June 2011, (x) International Fellow of Biomaterials Science and Engineering (FBSE), Chengdu, China, June 2012, (xi) the Medal of Merit of the Portuguese Health Minister, April, 2014; (xii) the Clemson Award for Contributions to the Literature by the Society for Biomaterials (SFB, USA), Denver, Apr., 2014; (xiii) the nomination as a Commander (Comendador, a kind of knighthood) of the Military Order of Santiago de Espada by the Portuguese President of the Republic, Guarda, Portugal, June, 2014; (xiv) the Gold Medal of the City of Guimarães (birth place of Portugal), being nominated as one of the first two honorary citizens of the city, Guimarães, Portugal, June, 2014; (xv) International Fellow of Tissue Engineering of Regenerative Medicine (FTERM), Boston, September, 2015; (xvi) the Novo Banco Great Innovation Award, December, 2015, (xvii) the induction as a foreigner member of the National Academy of Engineering (NAE) of the USA. Oct., 2016 – only 230 foreigner members, being Rui Reis the only Portuguese ever, (xviii) the European Award for Contributions to the Scientific Literature of the Tissue Engineering and Regenerative Medicine International Society, TERMIS-EU, Davos (Switzerland), June, 2017 (major European scientific award in this scientific area, being the the only World Scientist with Career and Contributions to the Literature Awards both in Biomaterials and in Tissue Engineering and Regenerative Medicine, both in Europe and USA).

In addition, he was or is a member of several editorial boards of journals (some examples are Tissue Engineering: A, Tissue Engineering: B, Tissue Engineering: C, Journal of Biomedical Materials Research Part B – Applied Biomaterials, Current Opinion on Solid State and Materials Science, International Materials Reviews, Acta Biomaterialia, Nanomedicine, Regenerative Engineering, acts as referee of numerous (more than 120) scientific journals and has been presenting author, member of the scientific committees, organizing committees, referee, chairman, discussion leader in Gordon Research Conferences, and invited lecturer in many conferences world-wide (Japan, USA, Canada, Mexico, Australia, South Korea, Israel, Turkey, Cuba, Colombia, Iran, Thailand, Indonesia, Taiwan, Singapore, New Zealand, and a large number of European Countries).

He was the founder and for 6 years (2006-2009, 2011-2012) the President of the Portuguese Society for Stem Cells and Cellular Therapies (SPCE-TC). Rui L. Reis was in the Board of Directors of the European Tissue Engineering Society (ETES) and has been (and continues to be) for many years on the governing board of the Global (world) TERMIS – Tissue Engineering and Regenerative Medicine International Society (the main International Society in his field of Research with members from 90 different countries). He was, in early 2010, elected the TERMIS-EU chapter chair (for a 3 years term). From 2013-2015 he was the World President-Elect of TERMIS. From January 2016 he is acting, for 3 years, as the World Global President of TERMIS. He is also for many years on the board of governors of the European Society for Artificial Organs (ESAO) and is presently on the board of the International Federation for Artificial Organs (IFAO), of which he organized the world meeting (IFAO-ESAO join meeting, October 2011, Porto, Portugal. He was Chair of Tissue Engineering Special Interest Group (SIG), Chair of the SIG on Orthopedic Biomaterials, as well as a member of Membership Committee, of the Society for Biomaterials (SFB, USA). He is the Editor-in-Chief of the “Journal of Tissue Engineering and Regenerative Medicine” (IF = 4), John Wiley & Sons- Blackwell.

He was the Chair and main responsible for organizing several main meetings and workshops. He has for instances organized, just with his team and no help from any professional organization, the large (730 people from 43 countries) TERMIS-EU 2008 meeting, in Porto. He is Editor of several international books and Guest Editor of several special issues of journals (J. Mater. Sci.: Mater in Medicine, Macromolecular Bioscience, Current Opinion on Solid State & Materials Science, Mater. Sci. & Eng.: Part C: Biomimetic and Supramolecular Systems, Journal of Supercritical Fluids). Rui L. Reis has produced so far 1023 publications listed in ISI Web of Knowledge, 902 publications listed in Scopus and 1515 listed on Google Scholar, including around 816 ISI listed articles published in scientific journals with referee (the other are mainly abstract published in international journals or ISI listed proceedings) – being around 70 of those review papers or editorials, 35

national and international awarded patents (several other applications ongoing – one of the awarded patents was selected as one of 15 finalists for the European Inventor Award of 2013), 7 books, 6 special issues in scientific journals, around 230 book chapters in books with international circulation and on international encyclopedias, and more than 1800 communications in conferences, almost all of them in international meetings (in Portugal, several other countries in Europe, USA, Canada, Australia, New Zealand, Japan, South Korea, Singapore, Taiwan, China, Israel, Chile, Colombia, Cuba, Iran, Indonesia, Thailand, etc.), including around 215 plenary or invited talks. He presented around 165 invited lectures in other Universities or Research Institutes.

His work has been cited around 22800 times in ISI WoK (more than 23.5 citations per article, 35050 citations in Google Scholar, 25500 citations in Scopus), and he has an ISI h-factor of 79 (92 according to Google Scholar, and 77 for Scopus). He is a member of 12 international research societies. His research work has been extensively covered by news and interviews in the most important PT and some international newspapers, radio stations and all the National TVs channels. He was selected as one of 100 most influential Portuguese citizens (in all areas of activity) by the respected EXPRESSO newspaper in 2013.

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