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"*Written by experts from academia and industry, with a multidisciplinary and instructive orientation, this is an authoritative book which may propel the application of nanomedicine to the diagnosis, therapy and monitoring of brain diseases.*"

Prof. Carmen Alvarez-Lorenzo
University of Santiago de Compostela, Spain

"*This book provides a perspective on nanotechnology solutions for delivery of therapeutics to the brain. It will serve as an excellent reference for investigators who are interested in finding solutions for treatment of central nervous system diseases.*"

Prof. Mansoor M. Amiji
Northeastern University, Boston, USA

In an era wherein nanotechnology has sparked a huge research interest, brain drug delivery is not an exception. Aimed at fighting several central nervous system (CNS) conditions, tailored nanoparticles open new avenues to address several challenges in the fields of brain drug delivery and targeting. With contributions from experts in different, complementary fields, this book covers a diversity of nanomedicines applied in the treatment and/or diagnosis and monitoring of CNS disorders, as well as aspects concerning their translation from bench to clinical practice. It encompasses general aspects pertaining to fundamental development, including tripartite in silico–in vitro–in vivo approaches. The book will inspire readers to discover possible approaches to holistically delivering drugs into the brain and will appeal to anyone involved in nanomedicine, pharmaceutics, neurological and cancer therapies, drug delivery research and computational and regulatory sciences.

Carla Vitorino is invited assistant professor at the Faculty of Pharmacy, University of Coimbra, Portugal, since 2014. She graduated in pharmaceutical sciences in 2007 and obtained her PhD in pharmaceutics in 2013 from the University of Coimbra. She has been working on the application of nanotechnology to drug permeation enhancement strategies for transdermal, oral and drug delivery systems for brain targeting and has published several scientific papers in peer-reviewed, high-impact journals, bringing together her vast experience in pharmaceutical technology, especially in the areas of nanotechnology and regulatory science. Her main research interests are nanotechnology, controlled release and the development of new drug delivery systems with a quality-by-design perspective.

Andreia Jorge obtained her PhD in macromolecular chemistry in 2013 from the University of Coimbra. During her PhD, she worked at the Faculty of Pharmacy, University of Barcelona, Spain, and the Faculty of Chemistry and Pharmacy, University of Ludwig–Maximilians, Germany. She then moved to a postdoctoral fellow position in a joint project with the Coimbra Chemistry Centre and the Institute of Advanced Chemistry of Catalonia, Spain, where she researched the chemical modification of oligonucleotides with therapeutic applications, using both experimental and computational approaches. Her current research interests include chemical-modified therapeutic oligonucleotides (antisense and siRNA) for gene silencing, antiproliferative oligonucleotides, sequence-specific protein–DNA interactions, lipid- and polymer-based drug delivery systems and programmable self-assembling DNA nanostructures.

Alberto Pais is full professor of chemistry and head of the Department of Chemistry, University of Coimbra. He is also head of the Macromolecular, Colloids and Photochemistry Group, Coimbra Chemical Center (in collaboration with the Multicomponent Systems lab, a part of that group). He has published 14 book chapters, 2 books and 200 articles in international peer-reviewed journals. His scientific interests are vast and include chemometrics, pharmaceutical technology, molecular modelling/simulation and data science.

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