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Recent Progress in Science and Engineering

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Interview

An Interview with Prof. Dr. Pedro Fonte

Recent Progress in Science and Engineering Editorial Office

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Prof. Dr. Pedro Fonte

Pedro Fonte is an Assistant Professor at the Faculty of Sciences and Technology, University of Algarve, Portugal. He is an Integrated Member of the Center for Marine Sciences (CCMAR) at the University of Algarve and a Collaborative Researcher at the Institute for Bioengineering and Biosciences (iBB) at Instituto Superior Técnico, University of Lisbon.

He has expertise in developing cutting-edge nanocarriers for drug delivery. His research is dedicated to pioneering targeted and controlled drug delivery systems that effectively cross biological barriers, enhancing treatment precision and efficacy. He is also a specialist in the lyophilization and solid-state characterization of pharmaceuticals and biopharmaceuticals, ensuring the stability and bioactivity of drugs. Moreover, his expertise extends to the structural characterization of therapeutic proteins, vital for advancing biopharmaceutical innovations. Currently, his groundbreaking work is primarily focused on revolutionary applications in cancer treatment and wound healing.

Pedro Fonte has successfully coordinated several funded scientific projects, establishing valuable collaborations with researchers and academics worldwide. His publication record includes over 60 papers in high-impact peer-reviewed journals, 10 book chapters, and 1 edited book. His contributions to the scientific community and society have garnered him many awards and distinctions, including recognition as one of the Top 2% Scientists by Stanford University.

1. Could You Please Tell Us Your Scientific Background and Main Research Area?

I am a Pharmacist and I hold a PhD in Pharmaceutical Sciences with a specialization in Nanotechnologies from the Faculty of Pharmacy, University of Porto, in collaboration with the University of Copenhagen. My academic foundation combines pharmaceutical sciences, biomedical sciences, and nanomedicine, supported by interdisciplinary training that includes an MBA in Business Management.

My main research area is nanomedicine, the development of biomaterial-based drug delivery systems for targeted and controlled release of therapeutic molecules, including proteins and peptides.

2. Could You Please Briefly Share Your Career Development Story with Us? And What Impressed You Most in Your Research Life?

After completing my Master's in Pharmaceutical Sciences, I pursued doctoral research that involved international collaborations. I then established myself as an independent researcher and Assistant Professor, first at Lusófona University and currently at the University of Algarve. What has impressed me most is the collaborative spirit of the scientific community and the transformative potential of interdisciplinary research, especially at the interface of biotechnology, engineering, and pharmaceutical sciences.

3. Where Are Your Sources of Information? Where Do You Get the Latest News about Your Research Area or Where Do You Take Inspiration From?

I stay updated through a combination of scientific journals, academic networks, and professional platforms like PubMed, Scopus, and Web of Science. I also draw inspiration from discussions with peers at conferences, workshops, and collaborations across academia and industry. Visiting

pharmaceutical companies and startups gives me a broader perspective and often fuels translational ideas.

4. Considering the Progress in Your Research Area, Could You Please Share with Us Some Hot Topics or Cutting-Edge Technologies in Your Research Field? And What Challenges and/or Developments May Be Encountered in the Coming Years?

Hot topics include mRNA and protein-based therapeutics, personalized nanomedicine, and the use of AI and machine learning to design smarter drug delivery systems. Challenges ahead include improving the scalability and regulatory approval of nanocarriers, as well as addressing safety and reproducibility issues. The integration of bioinformatics and pharmacogenomics into delivery systems design is likely to revolutionize individualized therapy.

5. Do You Also Offer Training and/or Further Education in Your Area?

Yes, I actively supervise PhD and Master's students, organize workshops, and coordinate curricular units in areas such as Pharmaceutical Technology, Nanomedicine, and Biomedical Sciences. I have developed innovative teaching materials and prototypes to provide students with both theoretical and practical experience. I also serve as a mentor in entrepreneurial programs and industry-academic collaborations.

6. Is There a Book You've Read that You'd Recommend Universally (i.e., to Everyone You Meet)?

I would recommend "The Innovator's Dilemma" by Clayton Christensen. While not strictly scientific, it offers deep insights into innovation, disruption, and the importance of thinking differently—concepts that are highly applicable in science and research, especially in translational fields like biomedical engineering and pharmaceutical sciences.

7. What Valuable Suggestions or Experiences Would You Like to Share with Young Scholars Regarding How to Be a Professional Researcher?

Be persistent, stay curious, and never stop learning. It's important to embrace failure as part of the research process. Build strong interdisciplinary foundations, seek mentorship, and cultivate communication skills. Publishing is vital, but so is contributing to your scientific community through collaboration, peer review, and mentoring.

8. What Is Your Long-Term Research Goal?

My long-term goal is to develop smart, biomaterial-based drug delivery platforms that can be tailored to individual patients and specific diseases, especially in regenerative medicine and oncology. I aim to bridge the gap between bench research and clinical application, ultimately contributing to safer, more effective therapies.

9. What Attracts You to Join the Editorial Board of *Recent Progress in Science and Engineering*?

I am drawn to the journal's multidisciplinary focus and its commitment to open-access dissemination of scientific knowledge. Being part of the Editorial Board offers a unique opportunity

to contribute to shaping the future of research by supporting quality publications and promoting innovative work across fields.

10. What Do You Think of the Future of *Recent Progress in Science and Engineering*, an Open-Access Journal?

The future is promising. As the demand for accessible, transparent science grows, open-access platforms like RPSE play a critical role in democratizing knowledge. With a strong peer-review system and focus on multidisciplinary excellence, RPSE is well-positioned to become a leading journal in showcasing impactful research in science and engineering.