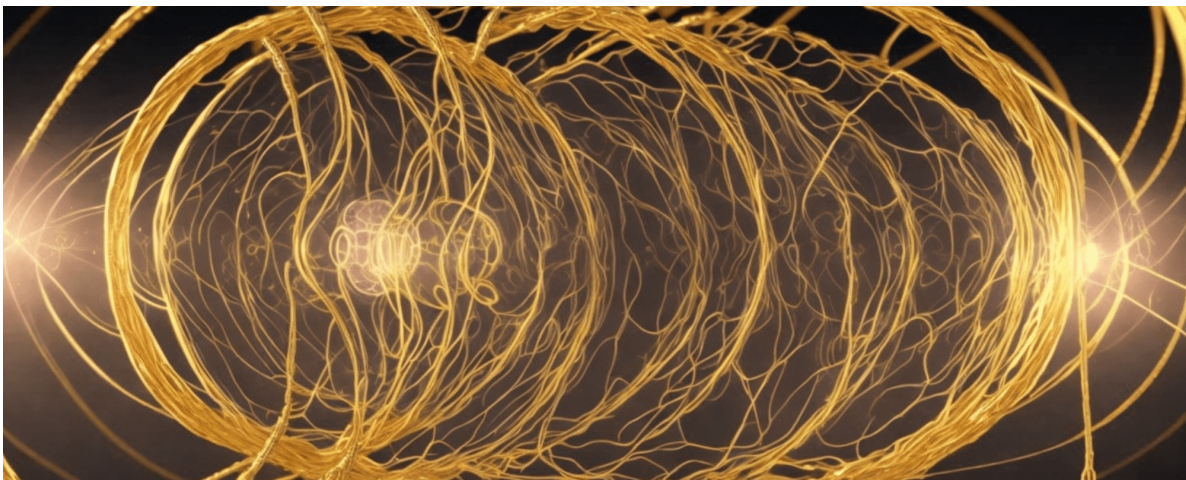


INTRODUCTION

Foreword: quantum physics, key to the technological advances of the future

Pau Mas Codina



Freqüències quàntiques. Conceptualització: Luisa Quiroga

After a first quantum revolution that has had major transformative effects on our civilisation in recent decades, science today is fully immersed in what is known as the *second quantum revolution*. As pointed out by the coordinators of the monograph *Quantum: a revolution that will change the world?* Anna Sanpera and Lluís Torner, whom I would like to thank for their efforts, the effects of this second revolution on the technologies of the future are as yet unknown. However, at the beginning of the twentieth century, when physicists of the stature of Albert Einstein and Max Planck were taking the first tentative and even reluctant steps towards defining quantum theory, nobody could have imagined where that first revolution would lead us, or the technological breakthroughs it would facilitate. However, the significance of those early premonitions, the subsequent theoretical developments and the ensuing industrial applications are beyond doubt.

Quantum science, which is currently experiencing this second revolution, is certain to play a major role in future technological advances, while raising many questions that the scientific community is not yet able to answer. Many are theoretical, while others are linked to its practical application, and a third category, of necessity involving a dialogue with society, are of an ethical, political and social nature.

Quantum science also plays a special role in Catalonia. The Institute of Photonic Sciences

(ICFO) and the Barcelona Supercomputing Center (BSC), to name just two of our most cutting-edge institutions, carry out groundbreaking research, pushing the boundaries of knowledge, as well as fostering transfer and innovation, creating an ecosystem that is enormously important for our country, and a hub that brings together leading research institutions, universities and business actors linked to industry.

This is the sixtieth issue of the monograph, which we have taken advantage of to mark the return of *IDEES* magazine to paper format. From this issue onwards, IDEES will once again be available on paper, although this does not mean that it will no longer be published digitally. On the contrary: we are convinced that through a dual paper and digital edition, we will be able to reach a wider readership and thereby increase the community of readers with whom we share reflections that will, ultimately, enable us to enrich public debate and strengthen democracy. We hope you find it interesting.



Pau Mas Codina

Pau Mas Codina és director del Centre d'Estudis de Temes Contemporanis (CETC). Anteriorment havia estat director general de la Fundació Catalunya-Europa i director d'Afers Públics d'ESADE.