Marta Reina

Bio

Since my first years in highschool I was fascinated by physics, and I really wanted to understand how the world works. While I was growing up, also my hunger of knowledge was. So, in 2012, I decided to try to discover more deeply the world surrounding me and its laws by studying Physics in university. I suddenly understood that, above all, what truly passionated me was Quantum Mechanics. I was astonished by the elegance of its concepts and of its mathematical foundations. Because of these, my Masters' thesis concerned the purely quantum problem of the spontaneous emission of two entangled atoms in the presence of an oscillating mirror. After this first research work, I chose to challenge myself by working on something new, the heat transfer at nanoscale. But, even if I liked the topic and this gave me the opportunity to enlarge my knowledge both in physics and in programming, this experience just confirmed me that working with Quantum Mechanics was the path I dreamt to follow.

Personal information

Place and date of birth	Palermo (Italy), 19 December 1993
Citizenship	Italian
Personal address	180 avenue de Choisy, 75013 Paris (France)
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Current position

11/2021 – Today 1 year and 1 month	Researcher in Quantum Computing algorithms - ColibrITD R&D Quantum, Paris France

Education

10/2018 - 10/2021	PhD, under the supervision of Philippe Ben-Abdallah and Riccardo Messina, at Laboratoire Charles Fabry UMR 8501 (CNRS, Institut d'Optique Graduate School), Palaiseau (France).
Title of the thesis	*Conduction-radiation coupling at the nanoscale*, Date of defense: 12 October 2021
10/2015 - 03/2018	Master degree in Theoretical Physics Università degli Studi di Palermo Vote: 110/110 *cum laude*

Title of the thesis	*Spontaneous emission of two entangled atoms in presence of an oscillating mirror*, Supervisor: Lucia Rizzuto, Date of defense: 8 March 2018
10/2012 - 03/2016	Bachelor degree in Physics Università degli Studi di Palermo Vote: 110/110 *cum laude*

Languages

Italian	Mother tongue
English	C1 level
French	B2 level

Skills

Programming	Excellent knowledge of C++ and LaTeX. Good knowledge of Python, Qiskit and myQLM libraries. Basic knowledge of Javascript, TypeScript, React, HTML, CSS, and Git.
Mathematical platforms	Excellent knowledge of Mathematica.
Softwares	Excellent knowledge of Photoshop and Microsoft Office.
Online courses	Machine learning lectures - Coursera
Interpersonal skills	Excellent team worker. Curious and motivated problem solver. Able to deal with important partners such as AWS, WolframAlpha and EDF.
Extra	Agile Methodology.

Publications

Peer-reviewed international journals

[1] M. Reina, R. Messina, and P. Ben-Abdallah, *Strong slowing down of the thermalization of solids interacting in the extreme near field*, Phys. Rev. B, **104**, L100305 (2021). (**link**)

[2] M. Reina, R. Messina, and P. Ben-Abdallah, *Conduction-Radiation Coupling between Two Closely Separated Solids*, Phys. Rev. Lett. **125**, 224302 (2021). (**link**)

[3] M. Reina, M. Domina, A. Ferreri, G. Fiscelli, A. Noto, R. Passante, and L. Rizzuto, *Collective spontaneous emission of two entangled atoms near an oscillating mirror*, Phys. Rev. A **103**, 033710 (2021). (**link**)

[4] M. Reina, R. Messina, S.-A. Biehs, and P. Ben-Abdallah, *Thermomechanical bistability of phase-transition oscillators driven by near-field heat exchange*, Phys. Rev. B **101**, 041409(R) (2020). (**link**)

[5] C. Kathmann, M. Reina, R. Messina, P. Ben-Abdallah, and S.-A. Biehs, *Scalable radiative thermal logic gates based on nanoparticle networks*, Sci. Rep. **10**, 3596 (2020). (**link**)

Popular science

[1] M. Reina, *Ways for Quantum Computing to help fight climate change*, 2022 (**link**).

[2] M. Reina, *Interpretations of quantum mechanics - The diatribe between realists and orthodox before Bell's theorem*, 2022 (**link**).

[3] M. Reina, *Interpretations of quantum mechanics - The diatribe between realists and orthodox before Bell's theorem*, 2022 (**link**).

Contribution to conferences - Oral contributions

Online seminar — **Webinar of GDR Ondes**

19 November 2020 — M. Reina, R. Messina, and P. Ben-Abdallah, *Conduction-radiation coupling between two closely-separated solids*

Paris (France) — **Nanoscale Heat Transport Days 2020**

30 - 31 janvier 2020 — M. Reina, R. Messina, S.-A. Biehs, and P. Ben-Abdallah, *Thermomechanical bistability of phase-transition oscillators driven by near-field heat exchange*

Lisbon (Portugal) — **META 2019 conference**

23 - 26 July 2019 — M. Reina, R. Messina, S.-A. Biehs, and P. Ben-Abdallah, *Thermomechanical bistability of phase-transition oscillators driven by near-field heat exchange*