



To the secretariat of the Master de Quantum Science and Technology,

I have met Marc Rovirola in the spring semester of 2019-20 in the *Solid State Physics* course that I lecture in the degree of Physics of the University of Barcelona and he has excelled for his deep comprehension of mathematical concepts and his great ability for logical reasoning and abstraction when it comes to cope with problems. I have met Marc this spring semester of 2020-21 in the course *Laboratory of Modern Physics* for which I act as lecturer. Now he is showing again, his good practical performing and his aptitude in applying appropriate theoretical concepts to understand experimental results he is obtaining.

Recently, Marc has incorporated into my research team to collaborate and to perform his "Treball de Final de Grau" under the supervision of Dr. Ferran Macià. Being in touch with him daily, I can confirm Marc has proved to assimilate easily the fundamentals of the matters involved in these courses and, at the same time, has demonstrated the acquisition of very good experimental skills. Considering the requirement level and the grade standards at *Universitat de Barcelona*, I must say his academic progress in these topics, and in the set of courses he has followed along the years, will definitely be an excellent preparation for the MSc programme he intends to start soon.

Marc has a strong vocation for Physics and a strong motivation to embark on scientific and technical endeavours. Now he wishes to move on by exploring a field that would be the perfect extension to his education. I am fully convinced Raul is very well qualified to take his career a step further starting the Master de Quantum Science and Technology.

Barcelona, 12 April 2021

A handwritten signature in blue ink, appearing to be "JM Hernández Ferràs".

Joan Manel Hernández Ferràs
Associate Professor

Tel. +34 93 4031959 jm_hernandez@ub.edu

March 12th, 2021

To whom it may concern,

This letter is to serve as formal recommendation for **Marc Rovirola Metcalfe** to support his application for the Master in Quantum Science and Technology given by the Catalonia Quantum Community. I have directed Marc TFG (final degree thesis) at the University of Barcelona. Marc has worked for the last 4 months in our lab taking measurement of magnetic excitations in patterned thin films excited by surface acoustic waves. He has developed a considerable set of experimental skills during this time based on high-frequency electrical measurements. I realized Marc is a valuable person for science since he has shown an impressive work capacity—at getting new concept in the field of spin waves for instance—, together with an outstanding independent thinking that is shown in his autonomous work in the lab. I have also taught Marc as a professor in the subjects “modern physics lab” and “Magnetism and superconductivity”, which are subjects from the last course at the physics degree at UB. I can tell that beside having excellent grades his work is far above the average and I would place him among the best students I have ever had.

I believe Marc is going to make a great asset to any research project and he will definitely become a good independent scientist in the future. Should you have any further question regarding this recommendation, please do not hesitate to contact me (ferran.macia@ub.edu).

Yours sincerely



Ferran Macià
Associate Professor

Departament de Física de Matèria Condensada
Universitat de Barcelona
Martí i Franquès 1, 4rd floor, room 421
08028 Barcelona (Spain)
Tel: (+34) 9340 211 49