

Report workbook

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Quantum physics grew up widely in the second half of the 20th century, many people contributed to pushing forward on many quantum technologies. I was highly unaware of the new achievements that quantum technologies can give us in the forthcoming years and this is a great surprise to me because I can now learn from some of the cutting-edge that are performing on the quantum scene.



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Glossary

Glossary item 1 Glossary item 1 [1](#)

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Declaration

I hereby declare that the work presented in this thesis is entirely my own and that I did not use any other sources and references than the listed ones. I have marked all direct or indirect statements from other sources contained therein as quotations. Neither this work nor significant parts of it were part of another examination procedure. I have not published this work in whole or in part before. The electronic copy is consistent with all submitted copies.

Zaragoza (Aragón), September 2021

Abstract

This is justified text.

1

Introduction

This is an introduction. **this is bold** *this is italic text*

This is Glossary item 1 and this is Glossary item 2.

Citation here^[1]. Footnote url here¹.

Another footnote simple².

¹<http://google.com>

²this is a footnote

Another chapter

This is a chapter.

Second page.

Footnote url here with header³.

$$f = 28 \cdot \sqrt{(B_{DC} + (N_y - N_x) \cdot 0.86 \cdot 10^6 \cdot 4\pi \cdot 10^{-7}) \cdot (B_{DC} + (N_z - N_x) \cdot 0.86 \cdot 10^6) \cdot 4\pi \cdot 10^{-7}}$$

Equation 2.1: Theoretical Kittel equation expanded for a Permalloy thin-film for X-axe

2.1 Section here

This is a new section.

| <i>Item</i> <i>size1</i> (nm) | <i>Item</i> <i>size2</i> (nm) |
|-------------------------------------|-------------------------------------|
| 8 | 600 |
| 10 | 400 |
| 12 | 300 |

Table 2.1: Sample table

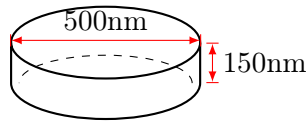


Figure 2.1: Disc sample figure

| <i>Item</i> <i>one</i> (m) | <i>Item</i> <i>two</i> (m) | <i>Item</i> <i>three</i> (m) | <i>Item</i> <i>four</i> (m) |
|----------------------------------|----------------------------------|------------------------------------|-----------------------------------|
| 8 | $15000 \times 800 \times 60$ | 7.5413550 | 0 |
| 10 | $15000 \times 450 \times 60$ | 9.4630770 | 0 |
| 12 | $15000 \times 350 \times 60$ | 10.368898 | 0 |

Table 2.2: Table with complex cells

³<http://google.com>

| <i>Item size</i> (μm) | <i>Object</i> (m) | <i>Object width</i> (nm) | <i>Current</i> (mA) | <i>Gap @ 500nm</i> (nT) | <i>Gap @ 1μm</i> (nT) |
|---------------------------------------|----------------------|-----------------------------|------------------------|----------------------------|--|
| $15 \times 0.800 \times 0.06$ | 259.07 | 300 | 1.61000×10^4 | 51.66902 | 29.08373 |
| | | 400 | | 50.82305 | 28.93193 |
| | | 600 | | 48.54992 | 28.49336 |
| $15 \times 0.450 \times 0.06$ | 224.42 | 300 | 2.37000×10^4 | 76.05934 | 42.81274 |
| | | 400 | | 74.81401 | 42.58931 |
| | | 600 | | 71.46784 | 41.94378 |
| $15 \times 0.350 \times 0.06$ | 229.52 | 300 | 2.64000×10^4 | 84.72435 | 47.69013 |
| | | 400 | | 83.33715 | 47.44119 |
| | | 600 | | 79.61009 | 46.72226 |

Table 2.3: Complex table 2

Important note: This is a nice TODO note.

Epilogue

This ia an epilogue.

Bibliography

- ^[1] Yi Li, Tomas Polakovic, Yong-Lei Wang, Jing Xu, Sergi Lendinez, Zhizhi Zhang, Junjia Ding, Trupti Khairé, Hilal Saglam, Ralu Divan, John Pearson, Wai-Kwong Kwok, Zhili Xiao, Valentine Novosad, Axel Hoffmann, and Wei Zhang. Strong coupling between magnons and microwave photons in on-chip ferromagnet-superconductor thin-film devices. *Physical review letters*, 123:107701, September 2019.

List of Publications

- ^[1] Fernando Luis, Pablo J. Alonso, Olivier Roubeau, Verónica Velasco, David Zueco, David Aguila, Leoní A. Barrios, and Guillem Aromí. A dissymmetric $[\text{gd}_2]$ coordination molecular dimer hosting six addressable spin qubits, 2020.
- ^[2] Salvatore Savasta, Omar Di Stefano, Alessio Settinieri, David Zueco, Stephen Hughes, and Franco Nori. Gauge principle and gauge invariance in quantum two-level systems, 2020.