

Report workbook

John Doe

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.





Departamento de
Física de la
Materia Condensada
Universidad Zaragoza

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John Doe

John Doe University

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Glossary

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

Glossary item 2 Glossary item 2 [1](#)

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), October 2021

Abstract

This is justified text.

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.

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.
- [2] Niobium Superconducting Nanowire, Anthony J. Annunziata, Daniel F. Santavicca, Joel D. Chudow, Luigi Frunzio, Michael J. Rooks, Aviad Frydman, and Daniel E. Prober. Single-photon detectors. 2006.

¹<http://google.com>

²this is a footnote

Another chapter

This is a chapter.

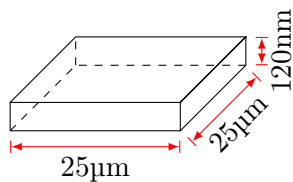


Figure 2.1: Prism drawing

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^[2].

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

Table 2.1: Sample table

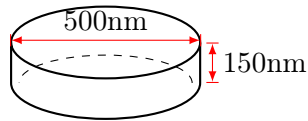


Figure 2.2: Disc sample figure

<i>Item one</i> (m)	<i>Item two</i> (m)	<i>Item three</i> (m)	<i>Item 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</i> @ 500nm (nT)	<i>Gap</i> @ 1 μm (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.



(a) Image 1



(b) Image 2

Figure 2.3: Set of two images**Figure 2.4:** This is a single image

Bibliography

- [1] Yi Li, Tomas Polakovic, Yong-Lei Wang, Jing Xu, Sergi Lendinez, Zhizhi Zhang, Junjia Ding, Trupti Khaire, 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.

- ^[2] Niobium Superconducting Nanowire, Anthony J. Annunziata, Daniel F. Santavicca, Joel D. Chudow, Luigi Frunzio, Michael J. Rooks, Aviad Frydman, and Daniel E. Prober. Single-photon detectors. 2006.

Epilogue

This ia an epilogue.

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 $[gd_2]$ 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.