

MetaboliQs

Our third MetaboliQs newsletter has found its way to your mail account!

In this issue we inform you on the latest news about present and future trends of quantum technologies related to the Quantum Flagship project MetaboliQs. We give you a general update about the project's status, present you a new characterization protocol for studying and optimizing the diamond substrates, achieved by one of our project partners and show you the latest publications as well as interesting upcoming events.

Please feel free to forward our newsletter to interested colleagues. Your feedback and suggestions are always welcome.

Happy reading!



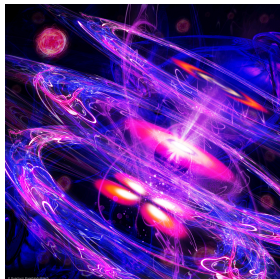
Laura Hau
Project Communications



MetaboliQs: News and Events

The European Quantum Flagship event

[On October 17-18th, over 250 European quantum experts gathered in Helsinki to discuss the present and future of quantum technologies.](#)



The Quantum Flagship “Exploring and Making Quantum Technology” event, which gathered over 250 quantum experts from all over Europe to discuss the current landscape of the quantum technologies’ ecosystem in Europe took place in Helsinki. Our Experts from MetaboliQs were present as well, and were able to discuss the current status and progress of quantum technologies within Europe with colleagues and partners.

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The project status of MetaboliQs

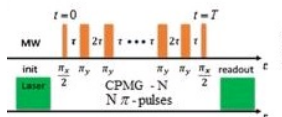


On October 16 the partners of the MetaboliQs project met in Helsinki with the goal of discussing the current project status. The meeting took place at 16th of October in conjunction with the European Quantum Flagship meeting. The partners were able to discuss important goals as part of the scientific and strategic progress as well as debating new challenges like the up-coming mid-term evaluation meeting.

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News from HUJI, Jerusalem

Project Update



As part of a deliverable, the Hebrew University of Jerusalem (HUJI) has developed and established a comprehensive characterization protocol for studying and optimizing the diamond substrates, both in terms of growth parameters and post-processing (fabrication, implantation, irradiation, surface termination).

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Events

09.12 → 13.12 2019 | Ecole Normale Supérieure in Paris France
Quantum Metrology and Sensing



The International Conference IQMS 2019 will present an up to date perspective on the thriving field of quantum science and technology. Among other topics it will cover the fields of inertial sensors; sensors based on artificial atoms in solids, such as color centers; quantum optomechanical and nanomechanical devices and electromagnetic sensing with quantum circuits.

[EVENT WEBPAGE](#)

13.-24.10.2020 | Cargese
Summer School Cargese



The Summer School in Cargese provides a stimulating environment for students interested in the field of nv centers and quantum sensing. Topics will be among others: Spin Physics and spin transfer, hyperpolarization and diamond technology in general, diamond growth and doping, 3D growth and Hetero-Diamond, Hyperpolarisator design and realization as well as Microwave induced phenomena that can be related to diamond technologies. As part of the program, external speakers will be invited and provide the attending parties with valuable insights.

[ASTERIQS WEBPAGE](#)

24 - 27 February | Barcelona
Mobile World Congress



24-27 February 2020

Registration is Open!

#MWC20

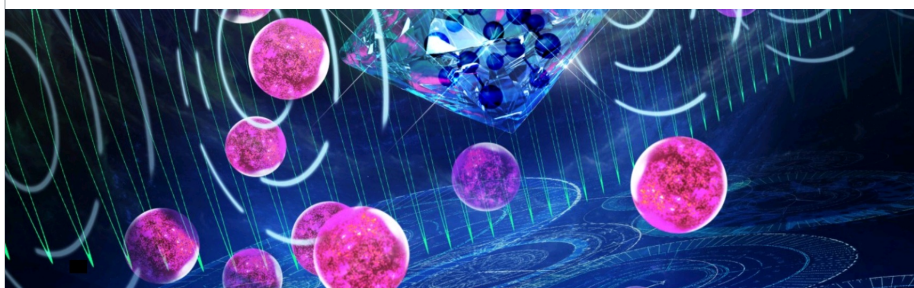
The GSMA MWC series (formally known as Mobile World Congress) is the world's largest exhibition for the mobile industry, and incorporates a thought-leadership conference featuring prominent executives representing global mobile operators, device manufacturers, technology providers, vendors, and content owners. As part of the Quantum Flagship, the project MetaboliQs will also be present.

[EVENT WEBPAGE](#)

Publications

A. Pick et. al., **Robust mode conversion in NV centers using exceptional points**, Phys. Rev. Research 1, 013015 (2019).

I. Meirzada et. al., **Enhanced spin state readout of nitrogen-vacancy centers in diamond using infrared fluorescence**, Phys. Rev. B 100, 125436 (2019).



About the MetaboliQs project

A cooperation of Fraunhofer IAF, NVision Imaging Technologies GmbH, Element Six Ltd., Hebrew University of Jerusalem, Bruker BioSpin GmbH, ETH Zurich and TU Munich

The project MetaboliQs develops an innovative diamond polarizer that works with any commercial MRI scanner and is able to work at room temperature with a 160 times higher efficiency, offering a polarization that is 40 times faster and 4 times cheaper than before. It consists of a diamond plate with a high number of nitrogen vacancy (NV) centers, which are used for the hyperpolarization of biomarker molecules.

This procedure leads to an improved polarization and a higher resolution of the imaging. MetaboliQs brings together a world-class multidisciplinary consortium and is part of the "Quantum Flagship" program funded by the European Union.

[PROJECT WEBPAGE](#)



MetaboliQs is part of the Quantum Flagship. The Second Quantum Revolution is unfolding now. The Quantum Flagship is driving this revolution in Europe.



This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 820374.



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