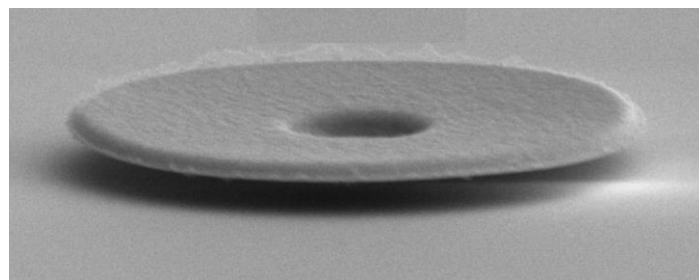


Magneto-elastic properties of suspended garnet disks

Context

A joint european research program coordinated by the Université Grenoble-Alpes seeks to appoint a creative and motivated experimental M2 student to participate in an ongoing project on magneto-elastic properties of suspended garnet disks. The position will be funded by the Horizon Europe PathFinderOpen program, which brings together leading European experimental and theoretical groups working on magneto-acoustic effects in magnetic garnets. The appointed candidate will be responsible for designing and characterizing magnetic and acoustic resonators and the coupling between magnons and phonons at microwave frequencies. S/he will carry out process development, documentation of processes, and implement the required steps to investigate and maximize the interaction between selected magnon and photon modes. The objective of this master project will be to evaluate how these suspended structures perform as magnon-phonon transducers. This will be achieved by coupling these slabs to microwave antenna or interdigitated piezoelectric transducer. S/he will collaborate with the other members of the Consortium focused on related topics on ferromagnetic resonance and microwave spectroscopy.



Microscopic image of a suspended drum-like garnet disk resonator of micron-size in diameter.

Work program & Skills acquired during internship

The work program will consist of performing magnetic resonance spectroscopy on individual micro-mechanical devices prepared by nano-lithography and comparing the spectral signature to finite element simulations. The skills acquired are microwave technology, magnetic and elastic eigen-response to oscillatory excitation and finite element simulations. The project will result in a thesis project for which funding is already available.

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Requested background: **Master 2**
 Duration: **6 months**
 Start period: **Feb/ March 2023**
 Possibility of PhD thesis : **YES**
 Proposal number : **do not fill in**