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Development of MKIDs for optical to near-IR astronomy

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DIAS is working on the further development of Microwave Kinetic Inductance Detectors (MKIDs) for astronomical instrumentation in the visible and near-IR. In collaboration with Trinity College Dublin we design, fabricate and analyse our detector prototypes and we intend to build and deploy an astronomical camera towards the project's end. We plan to use sub-stoichiometric TiNx multi-layered stacks of Ti and stoichiometric TiN, as well as Al and multi-layered stacks of Al and Ti for noise performance comparison. We intend to increase single-pixel energy resolution, quantum efficiency and pixel yield by further improvement of pixel design and the use post production optimisation techniques. We are also planning to increase MKID pixel numbers and push their sensitivity further towards longer wavelengths. We will present details about our experimental setup as well as first results of preparation studies performed on small test arrays

Less than 5 years of experience since completion of Ph.D

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Student (Ph.D., M.Sc. or B.Sc.)

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