

KELLER Marc

CDD

Optimization and miniaturization of a regenerative sensor in micro- and nanotechnology for the detection and quantification of organic molecules

Nowadays, there are no nano or miniaturized micro-sensors that are intended to be sent into space to search for traces of life. Nevertheless, the growing number of CubeSats, which will be launched soon, could be an opportunity to test new types of trace molecule detectors at a lower cost. The first step will be to optimize a sensor manufacturing process, which was developed in a previous thesis, and then to check the repeatability of the measurements.

The second part will thus focus on the miniaturization of the sensor. It is in this context of reducing the weight of the instruments embarked during space missions, of versatility and gain in performance that this project has been launched, in order to allow rapid and efficient qualitative and quantitative detection of the majority of terrestrial biomarkers.

