Developments, characterization and proton irradiation damage tests of AlN photodetectors for VUV Solar Observations

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For next spaceborne solar ultraviolet (UV) radiometers, innovative metal-semiconductor-metal photodetectors based on wurtzite aluminum nitride are developed and characterized. A set of measurement campaigns and proton irradiation damage tests are carried out to obtain their UV-to-visible characterization and degradation mechanisms. First results on large area prototypes up to 4.3 mm diameter and their particular advantage compared to silicon space qualified photodetector are presented.

Key words: VUV photodetectors; AlN; proton irradiation; space applications