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Long Term Stability Testing of GaN (Gallium nitride) based UV sensor under UV lamp irradiation

Progress UV exposure test of Genicom's UV sensor for confirm stability of GaN base UV sensor.

Usually, because the life-time of UV sensor is shortened in case of is exposed in strong ultraviolet rays, the stability is became very important factor in using instruments.

Because amount of UV emitted intensity is difference according to light sources and lamp types, LPM (Low Pressure Mercury) lamps had been selected in the long time UV exposure test to prescribe stability test condition.

The test sensors are UVA sensor (GUVA-T11GD), UVB sensor (GUVB-S11GD), UVC sensor (GUVC-T10GD). And the exposure test conditions are UVA lamp (peak 352nm, 15mW/cm²), UVB lamp (peak 306nm, 15mW/cm²), UVC lamp (peak 253.7nm, 5mW/cm²) and exposure times are over 5,000 hours. For the stability properties of UV sensor, the results recording relative photocurrent value by initial sensors photocurrent every 24 hours.

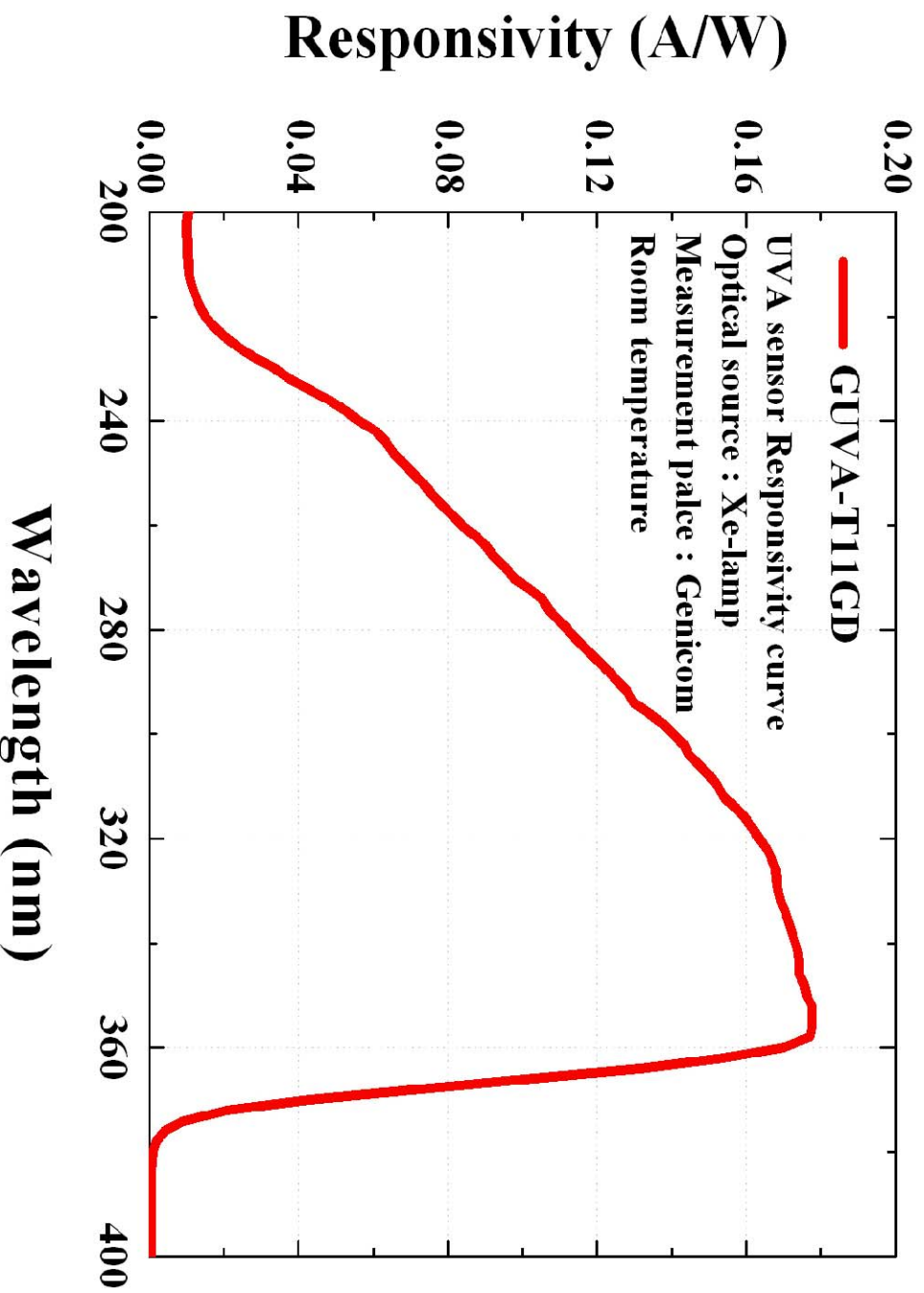
The exposure test time is over 5,000 hours each test results are calculated and described to percentage value.

At the test results, all UV sensors (UVA, UVB, UVC sensor) have stability properties under UV exposure in each test condition. Their photocurrent variation is within +/- 10%.

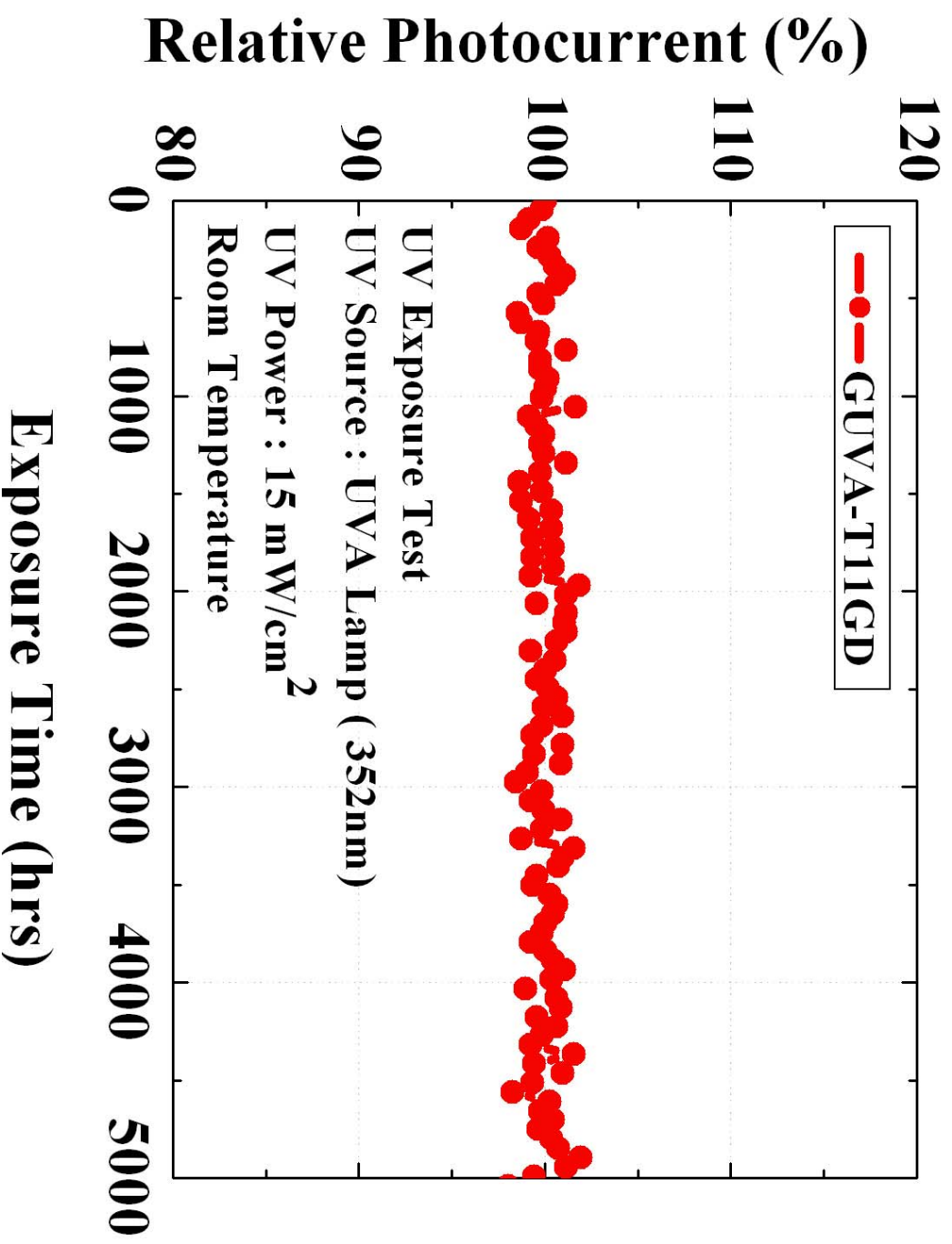
Please refer to the charts on the following pages.

- Sungmook. Lim, 12 July 2011

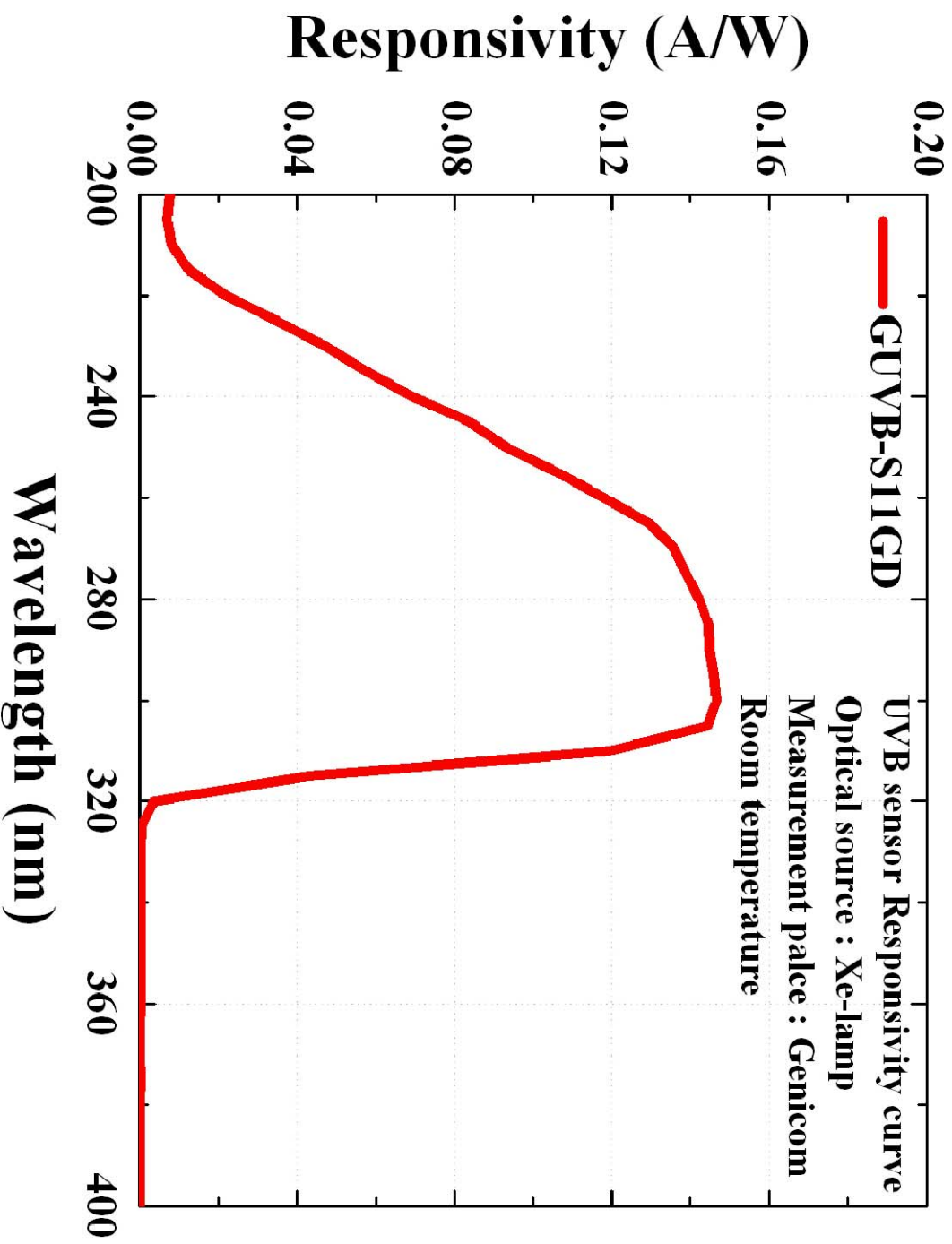
Responsivity curve of UVA sensor



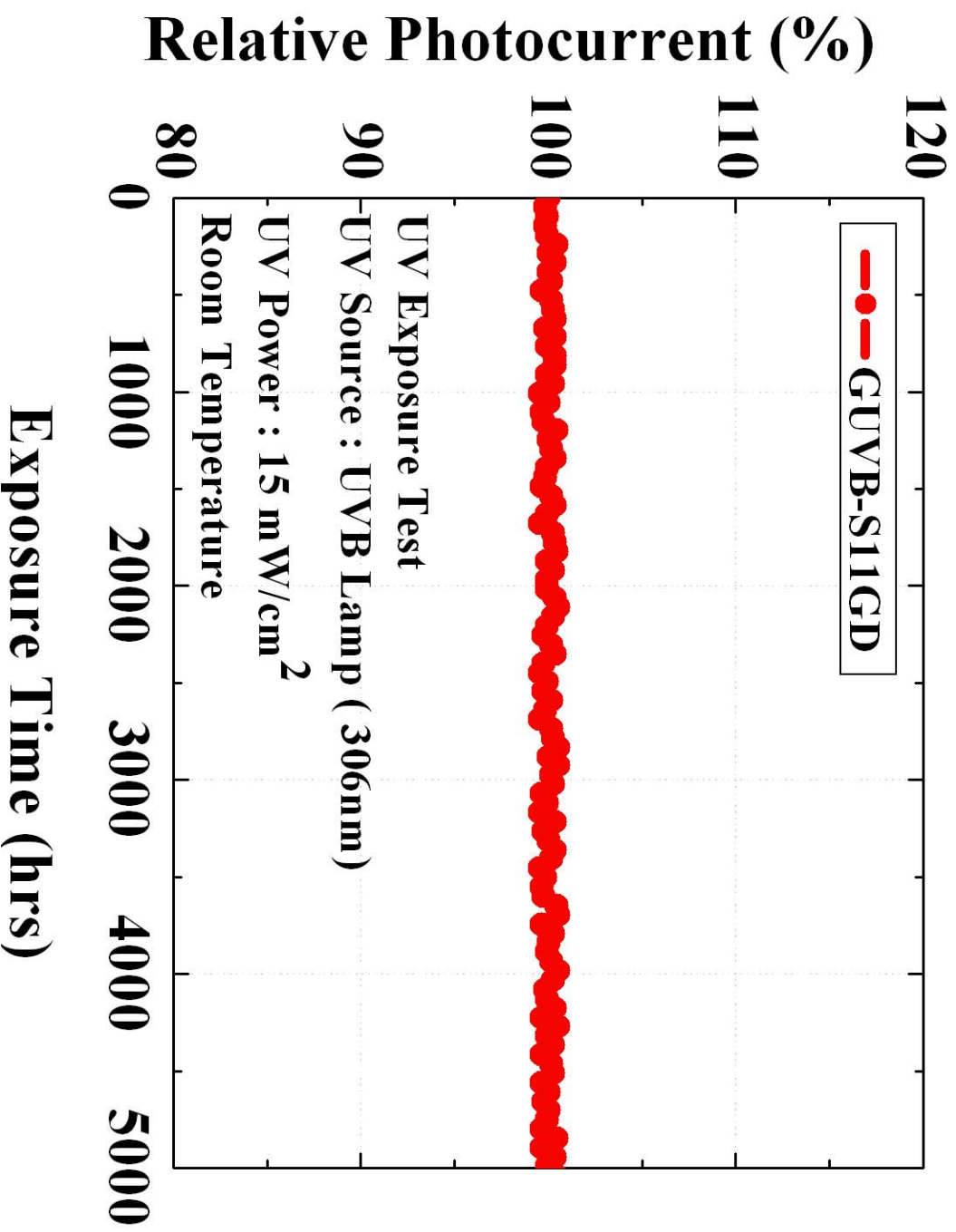
UVA sensor variance in Relative photocurrent versus 352nm exposure time



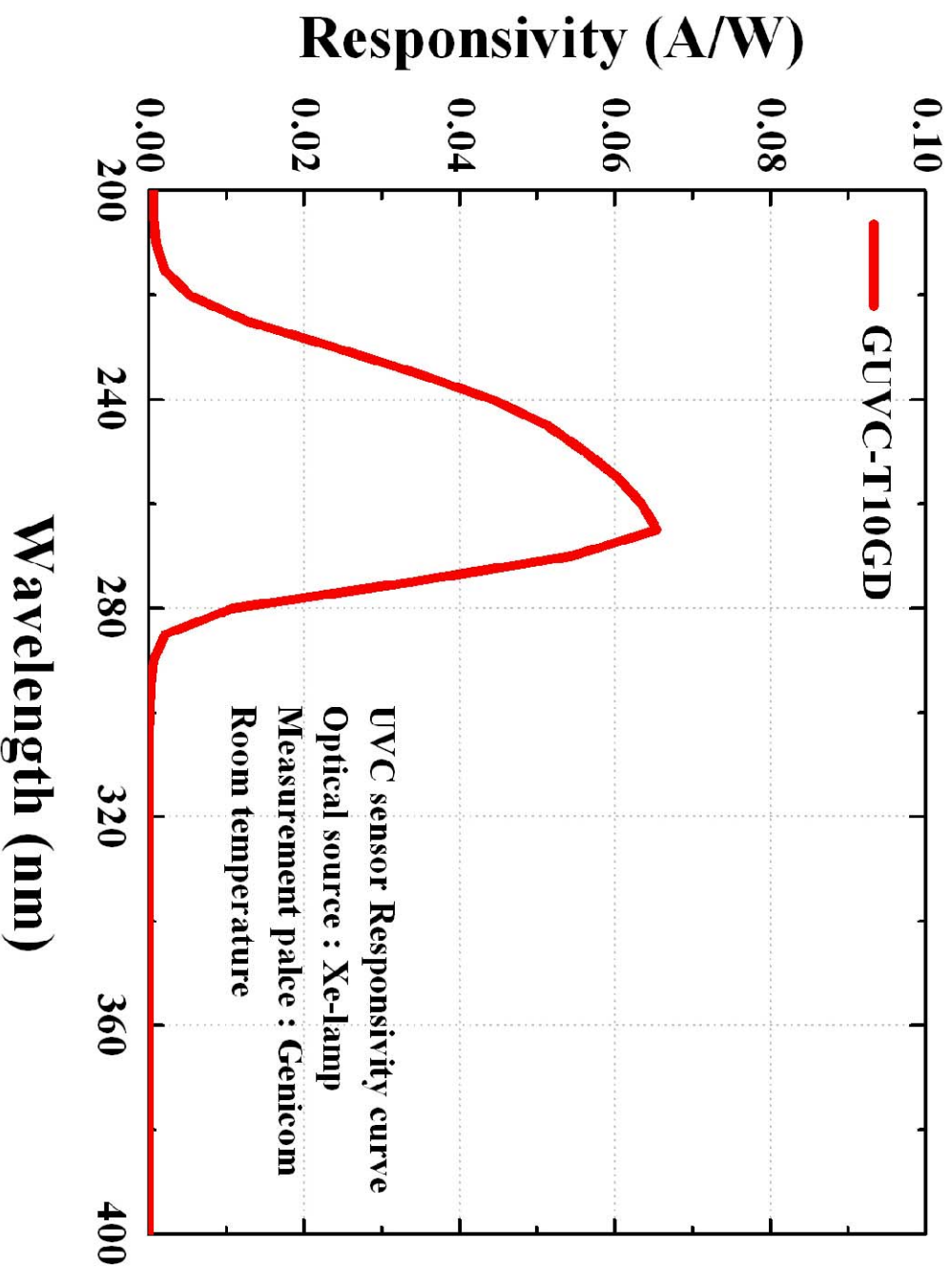
Responsivity curve of UVB sensor



UVB sensor variance in Relative photocurrent versus 306nm exposure time



Responsivity curve of UVC sensor



UV-C sensor variance in Relative photocurrent versus 254nm exposure time

