

Attapon Charoenkunlawanit 2014: Spectral Properties of Pump for Photons Generation from Type-II Spontaneous Parametric Down Conversion Process. Master of Science (Physics), Major Field: Physics, Department of Physics. Thesis Advisor: Assistant Professor Surasak Chiangga, Dr.rer.nat. 66 pages.

This thesis studies spectral properties of pump as a function of supplied voltage for photons generation from Type-II spontaneous parametric down conversion (SPDC) process. It is found that when supplied voltage is increased, the pump wavelength and the full width at half maximum (FWHM) of the pump increase, namely, the supplied voltage of 560, 760 and 960 millivolts the measured wavelength are 404.95, 405.74 and 406.26 nanometer, respectively, with FWHM of 1.57, 2.12 and 2.48 nanometer, respectively. This result shows that the potential difference of 560 millivolts is suitable for production of photons due to it gives maximum photons generation. It is found that a region the photon pairs overlap has diameter of about 1 millimeter and average photons of 670 Hertz and the photons are un-polarized photons, namely, the visibility of polarization is about 0.92 and the uncertainty of visibility is about 0.01.

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