

Phase imaging of cancer cell using compressive sensing apply to digital holography

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The aim of this research is to develop a quantitative phase imaging system based on digital holography for distinguishing cancer cells and ordinary cells. For improving the efficiency of the imaging system, a computer program, which has been used for digital hologram reconstruction, is modified by integrating with an algorithm based on compressive sensing theorem. The feature of compressive sensing algorithm is the ability of recovery signals from the sparsity of sampling signals. Therefore, the phase imaging system with compressive sensing algorithm is providing an accurate cancer cell reconstruction from a relative small number of encoded signal sample cells.

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