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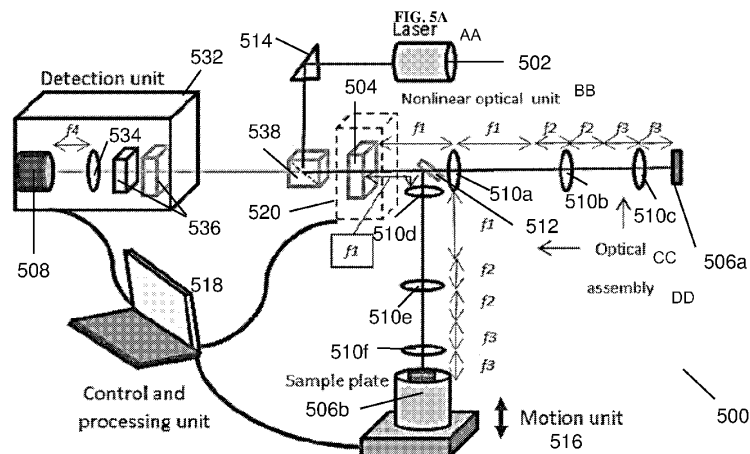
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(54) Title: OPTICAL SYSTEM AND METHOD OF FORMING THE SAME



(57) Abstract: Various embodiments may provide an optical system. The optical system may include a laser source configured to emit a pump beam. The optical system may also include a non-linear medium configured to generate, based on the pump beam, an idler beam configured to incident on the sample and configured to be reflected, and a signal beam. The optical system may further include a mirror configured to reflect the signal beam so that the reflected signal beam interacts with the reflected idler beam in the non-linear medium to generate a resultant signal beam that carries an interference pattern. The optical system may additionally include a detector configured to receive the resultant signal beam for imaging the sample. The optical system may also include one or more optical elements configured to direct the idler beam from the non-linear medium to the sample, and the signal beam from the non-linear medium to the mirror.

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