Abstract:

Presented thesis deals with a problem from the field of image processing for application in multiple scanning of jewelery stones. The aim is to develop a method for preprocessing and subsequent mathematical registration of images in order to increase the effectivity and reliability of the output quality control. For these purposes the thesis summerizes mathematical definition of digital image as well as theoretical base of image registration. It proposes a method adjusting every single image to increase effectivity of its subsequent processing. One image for every evaluated gemstone is generated using image registration. The method is implementated in the MATLAB environment.