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(54)Fast focusing method and device for multi-spectral imaging

Fast focusing methods and devices for multispectral imaging are disclosed. The method comprising selecting one of a plurality of imaging channel as a reference channel, adjusting rotation positions of a stepper motor, calculating focus measures corresponding to all rotation positions of the stepper motor, and obtaining a first distribution curve; in each of the other imaging channels, selecting at least three rotation positions of the stepper motor, matching focus measures at the selected rotation positions with the first distribution curve to obtain a second distribution curve and a offset value between the first distribution curve and the second distribution curve, and calculating a clear focusing position of the imaging channel to be focused according to the offset value; performing a fine-tuning focusing, and thereby obtaining a more precise clear focusing position. A fast focusing for multi-spectral imaging and obtain clear multispectral images is obtained.

Selecting a reference channel, and finding the clearest focusing position of the reference channel by coarse-tuning and fine-tuning focusing Calculating focus measures corresponding to all rotation positions of a stepper motor in the reference channel by an interpolation method, and obtaining a distribution curve representing the change of the focus measure along with the rotation position of the stepper motor For each of the other channels, selecting at least three positions, calculating focus measures at the selected positions, and matching the focus measures at the selected rotation positions with the distribution curve Calculating an offset value between a distribution curve representing the change of the focus measure of the channel to be focused along with the rotation position of the stepper motor and the distribution curve representing the change of the focus measure of the reference channel along with the rotation position of the stepper motor Performing a fine-tuning focusing operation in a preset range near a calculated clear focusing position of the channel requiring being focused, and obtaining a precise clear focusing position

Fig. 1