Electronic Supplementary Material (ESI) for Lab on a Chip. This journal is © The Royal Society of Chemistry 2020

Video_1_mIFC_chip_devise_and_functional_units

The video shows all functional units of the chip processing pollen grains.

Video_2_sunflower_preview

Multidirectional imaging of a sunflower pollen. (left: raw data; right: series of cropped images) .

Video_3_rotation_modes

Example data of the 3 rotation modes observed. A) Flipping; B) Tumbling; C) Around unique axis

Video_4_pollen_mix_classification_preview

mIFC of a mixed population of 15 pollen species listed in Fig.6.

On the left you can see the full-frame images, the results of the object recognition as well as tracking ID and result of the classification. On the right you can see the cropped mIFC series for each detected pollen grain.

Video_5_Hazel_preview

3d reconstruction result of a mIFC tilt series of a Hazel pollen.

Video_6_wbc_preview

3d reconstruction of a white blood cell based on bright field images of the WBC and fluorescence images of the stained nuclei.