



中國醫藥大學

China Medical University

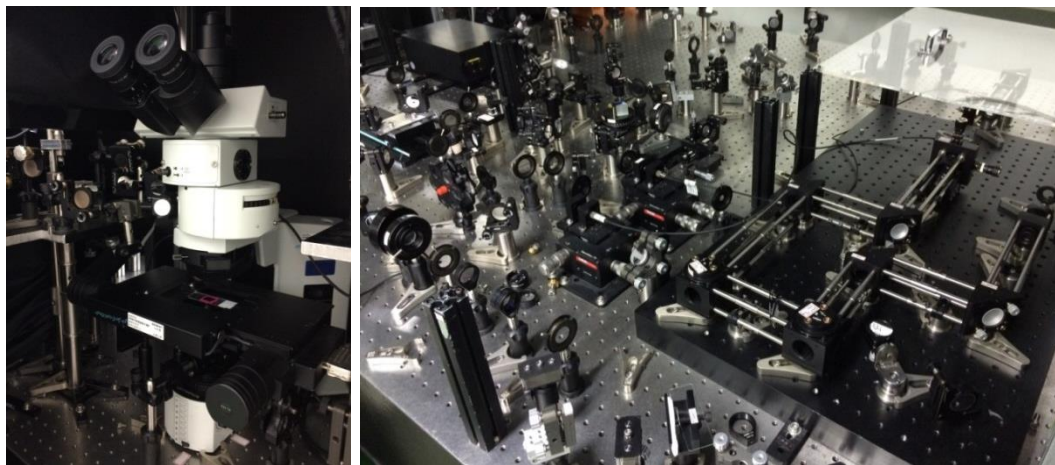
Institute of New Drug Development



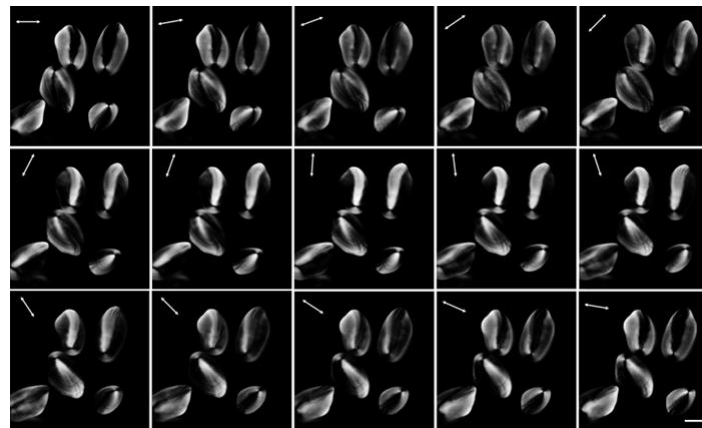
Dr. Guan-Yu Zhuo

We focus on developing advance optical imaging techniques such as multiphoton microscope, superresolution optical microscope, optical tracking microscope, endoscope, etc. that are potentially useful for biomedical applications. We seek innovative examination schemes to demonstrate and test our studies into a clinical environment, solving the current difficulties shown in diagnosis and therapy.

Optical imaging system construction and development

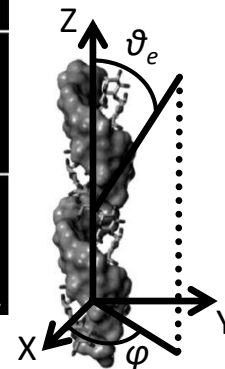


Nonlinear optical imaging

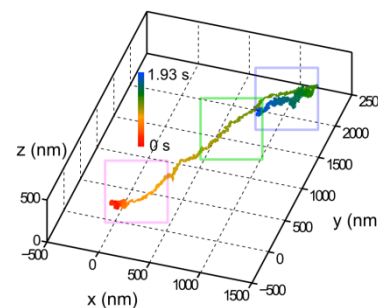


Polarization-dependent SHG images of potato starch, where the arrows in each image indicate the fundamental polarization. Scale bar: 20 μm .

$$\theta_e = \cos^{-1} \sqrt{\frac{\chi_{22}^{(2)}/\chi_{16}^{(2)}}{2 + \chi_{22}^{(2)}/\chi_{16}^{(2)}}}$$



3D label-free single-particle tracking in live cells



Frame rate: 30kHz
Localization precision:
1.6 nm in x-y; 2.5 nm
in z

