Tutorial 1: First *In-silico* microscopy image

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1. Generate the the PSF:

   The point spread function (PSF) can be generated using the following command

   ```
   term$ python run_genpsf.py
   ```

   It will create two PSF for wavelength 670 nm and 518 nm ("PSF_gandy_lam518_fs800.dat" and "PSF_gandy_lam518_fs800.dat"). The code is currently very slow. I will work on GPU accelerations in later versions (or hopefully someone else can help me with that).

2. Generate in-silico monochrome images.

   (a) generating Image data files

   The image data file containing resultant fluorescence intensity for each pixel can be calculated using the following commands,

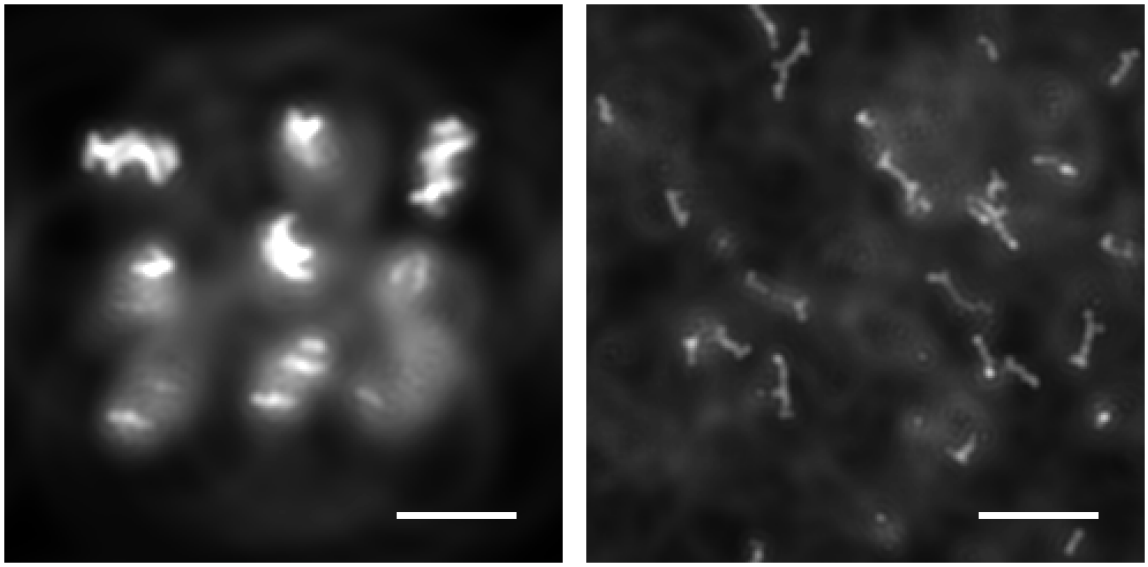
   ```
   term$ ../../gen_mono -p parameters.dat -f dp100.gro -o img100

   term$ ../../gen_mono -p parameters.dat -f dp2000.gro -o img2000
   ```

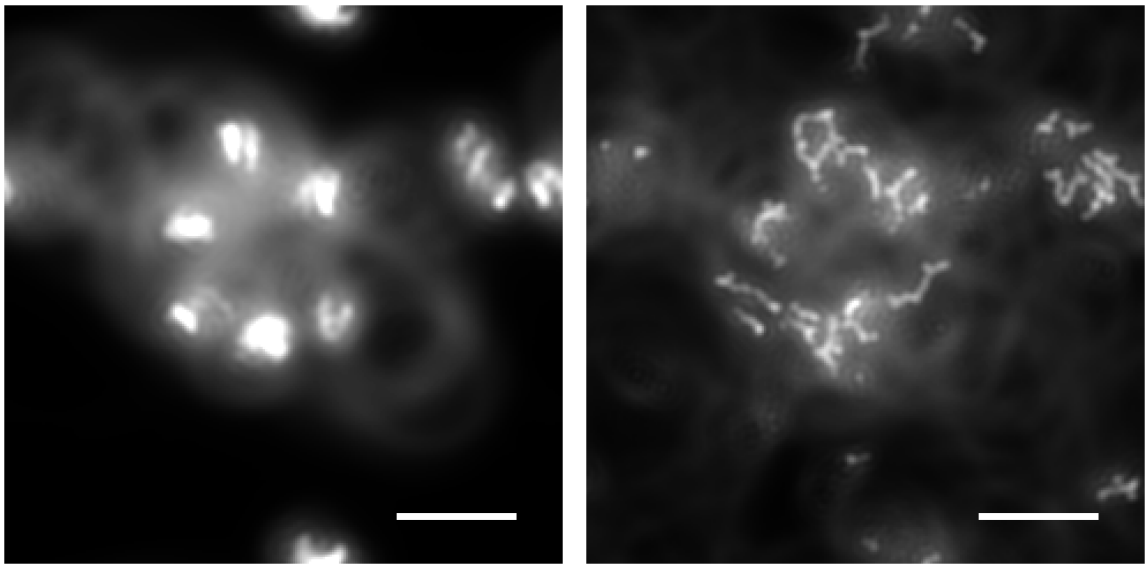
   It will create two pair of files "img100_lam670_fs800.dat", "img100_lam518_fs800.dat","img2000_lam670_fs800.dat", and "img2000_lam518_fs800.dat".

   (b) Render monochrome images
   Monochrome images can be rendered using the following commands,

   ```
   term$ python ../../render_mono.py -f img -p png_param.dat -t 100
   ```

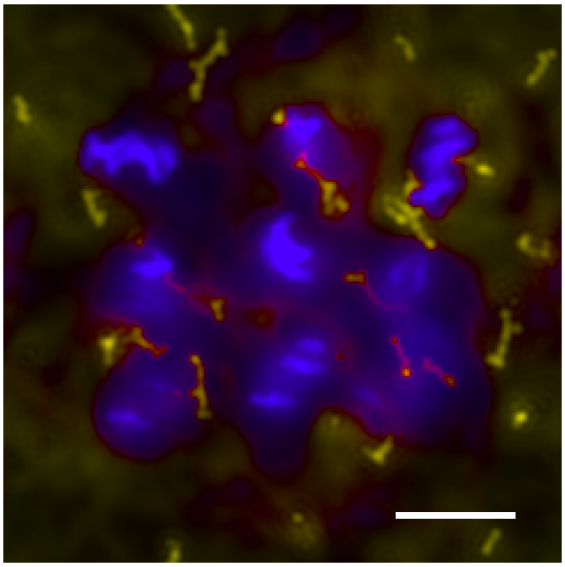


```
term$ python ../../render_mono.py -f img -p png_param.dat -t 2000
```



3. Generate colored in-silico monochrome image.

```
term$ python ../../mono2color.png -f img -p png_param.dat -t 100
```



```
term$ python ../../mono2color.png -f img -p png_param.dat -t 2000
```