_oving

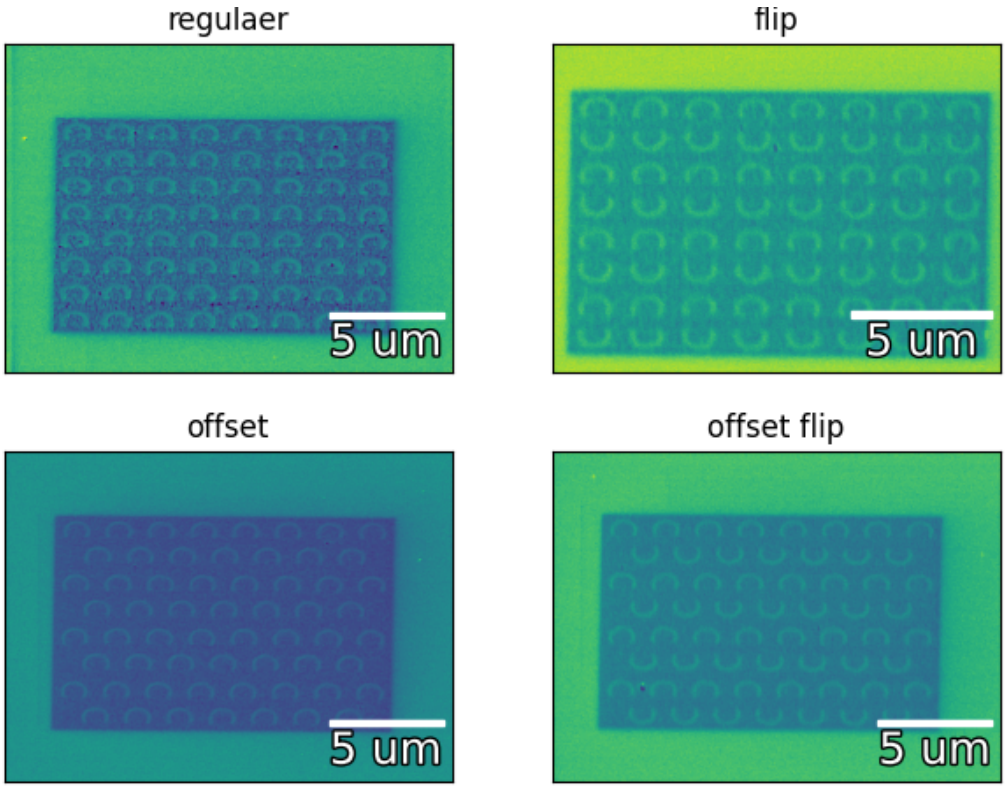
September 26, 2022

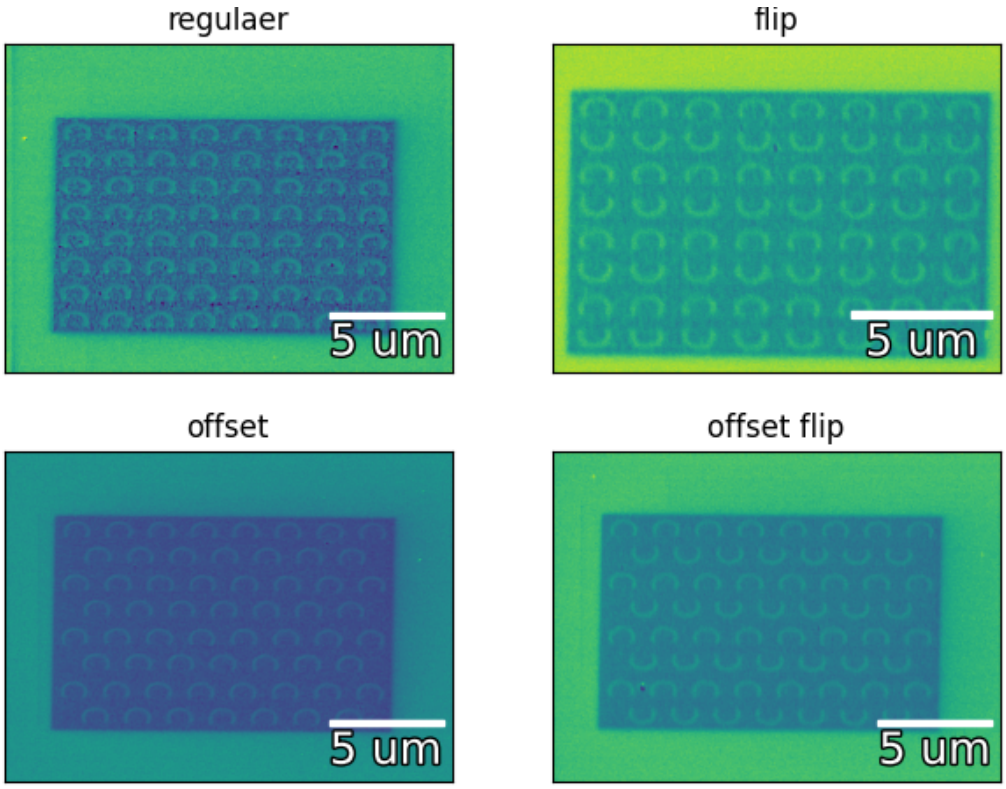
[10]:
```
import tifffile as tff
import matplotlib.pyplot as plt
from scipy import ndimage
import numpy as np

from mpl_toolkits.axes_grid1.anchored_artists import AnchoredSizeBar
import matplotlib.font_manager as fm
import matplotlib.patheffects as patheffects

%matplotlib widget
```

[11]:
```
def read():
    files = [
        "data/ferdig_regulaer_8_04.tif",
        "data/ferdig_flip_6_03.tif",
        "data/ferdig_offset_4_26.tif",
        "data/ferdig_offset_flip_4_21.tif",
        # "data/ferdig_invert_0_51.tif"
    ]
    bilder = []
    metadatas = []
    for file in files:
        bilde = tff.TiffFile(file)
        metadatas.append(bilde)

        data = bilde.asarray()
        print(data.shape)
        data = data[200:1700, 0:2040]
        bilder.append(data)

    return bilder, metadatas


def analyze(imgs, metadatas):
    return imgs, metadatas

def plot(imgs: list[np.ndarray], metadatas: list[tff.TiffFile]):
    fig, axs = plt.subplots(2, 2)
```

```
    fig.tight_layout()

    # Avanserte greier?
    fontprops = fm.FontProperties(size=18)
    scalebar_kwargs = {'size': 5, 'label': '5 um', 'loc': 4, 'frameon': False,␣
↪'color': 'white', 'size_vertical': 0.2, 'label_top': False, 'fontproperties':
↪ fontprops}
    def add_scalebar(ax: plt.Axes):
        scalebar = AnchoredSizeBar(transform=ax.transData, **scalebar_kwargs)
        # Denne legger til et svart omriss rundt scalebar teksten, for å gjøre␣
↪den lettere å lese
        scalebar.txt_label._text.set_path_effects([patheffects.
↪withStroke(linewidth=2, foreground='black', capstyle="round")])
        ax.add_artist(scalebar)


    # Slutt på avanserte greier

    for idx, (bilde, metadata) in enumerate(zip(imgs, metadatas)):
        skala = metadata.fei_metadata["EScan"]["PixelWidth"]
        extent = [0, skala * bilde.shape[1] * 10**6, 0, skala * bilde.shape[0]␣
↪* 10**6]

        axs.flat[idx].imshow(bilde, extent=extent, cmap="viridis")
        axs.flat[idx].set_xticks([])
        axs.flat[idx].set_yticks([])
        add_scalebar(axs.flat[idx])

        axs.flat[idx].set_title(" ".join(metadata.filename.split("_")[1:-2]))
        # annotate(metadata.filename, xy=(0, 1.05),  xycoords="axes fraction",␣
↪fontsize=14, color="#399ad5")

    fig.subplots_adjust()
    fig.show()
    fig.savefig("ferdig.jpg" ,dpi=300, bbox_inches="tight")

data, metadata = read()
lyzed_data, metadata = analyze(data, metadata)
plot(data, metadata)
```

```
(1887, 2048)
(1887, 2048)
(1887, 2048)
(1887, 2048)
```


regulaer
5 um
flip
5 um
offset
5 um
offset flip
5 um


regulaer
5 um
flip
5 um
offset
5 um
offset flip
5 um

[ ]: