

# main

November 15, 2023

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[34]: import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

for i in range(1,6):
    particles = pd.read_csv(f'{i}.csv')

    filter_particles = particles.copy()

    filter_particles.loc[:, 'Diameter'] = 4*(filter_particles['Area']/
↪filter_particles['Perim.'])

    plt.figure(figsize=(6,15))
    plt.subplot(5,1,i)
    sns.set_context('talk')
    sns.set_style('ticks')
    plt.title(f'figure-{i}')
    filter_particles['Diameter'].hist(bins=20)

    plt.xlabel('Diameter (nm)')
    plt.ylabel('Counts')
    print(f'figure {i} Mean diameter and SD')
    print('Mean diameter = ',filter_particles['Diameter'].mean(),'nm')
    print('SD = ',filter_particles['Diameter'].std(),'nm')
```

```
figure 1 Mean diameter and SD
Mean diameter =  5.921243491559847 nm
SD =  1.287905952291822 nm
figure 2 Mean diameter and SD
Mean diameter =  8.392107453568991 nm
SD =  2.017963202030467 nm
figure 3 Mean diameter and SD
Mean diameter =  14.365439765446755 nm
SD =  3.3258184828173882 nm
figure 4 Mean diameter and SD
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Mean diameter = 5.184739233942608 nm  
SD = 1.185469412397744 nm  
figure 5 Mean diameter and SD  
Mean diameter = 10.618323015611368 nm  
SD = 1.9231613829982224 nm





