Histogram Processing

Histogram Processing

- Histogram

- where   is the kth gray level and   is the number of pixels in the image having gray level
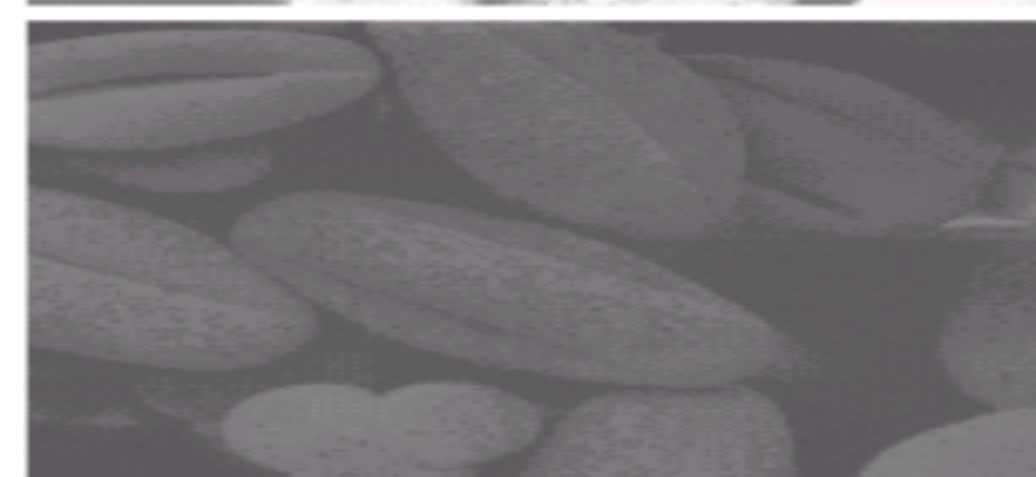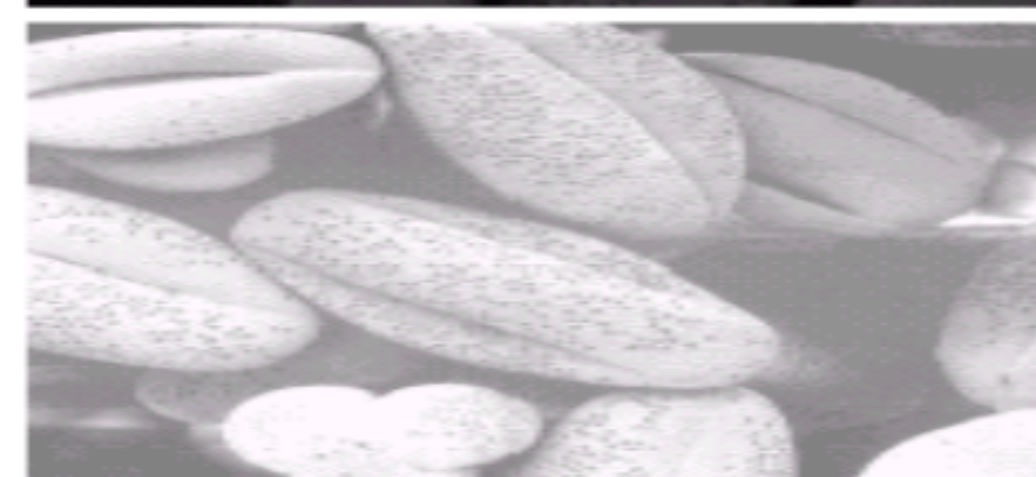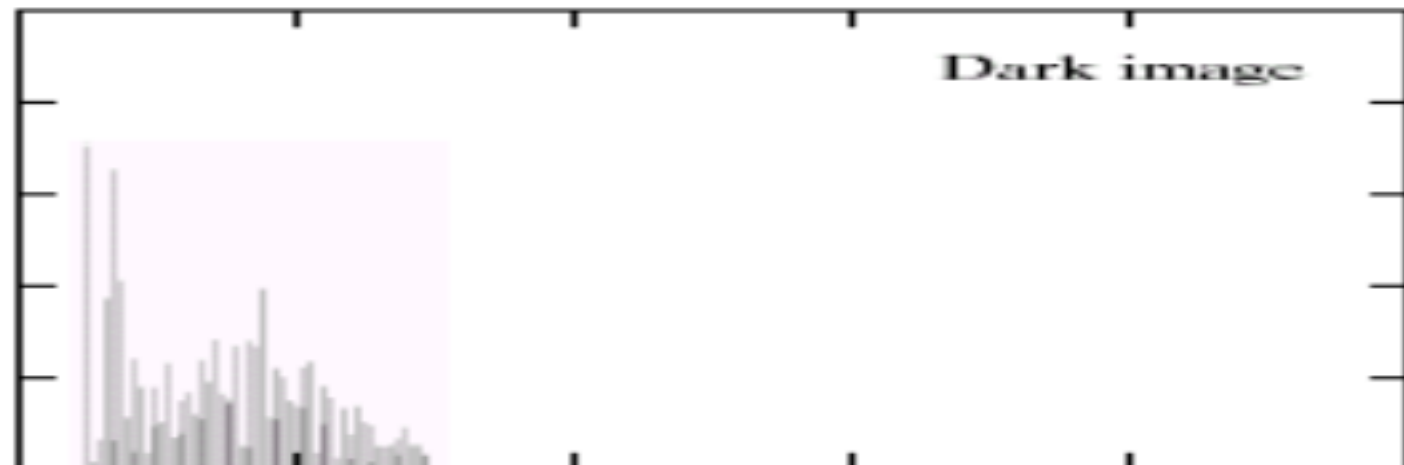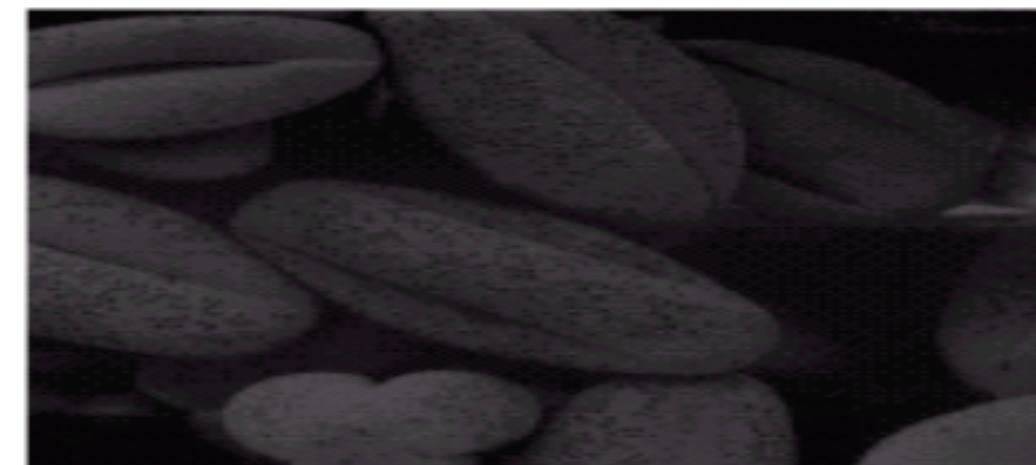- Normalized histogram

Dark image

Bright image

Low-contrast image

High-contrast image
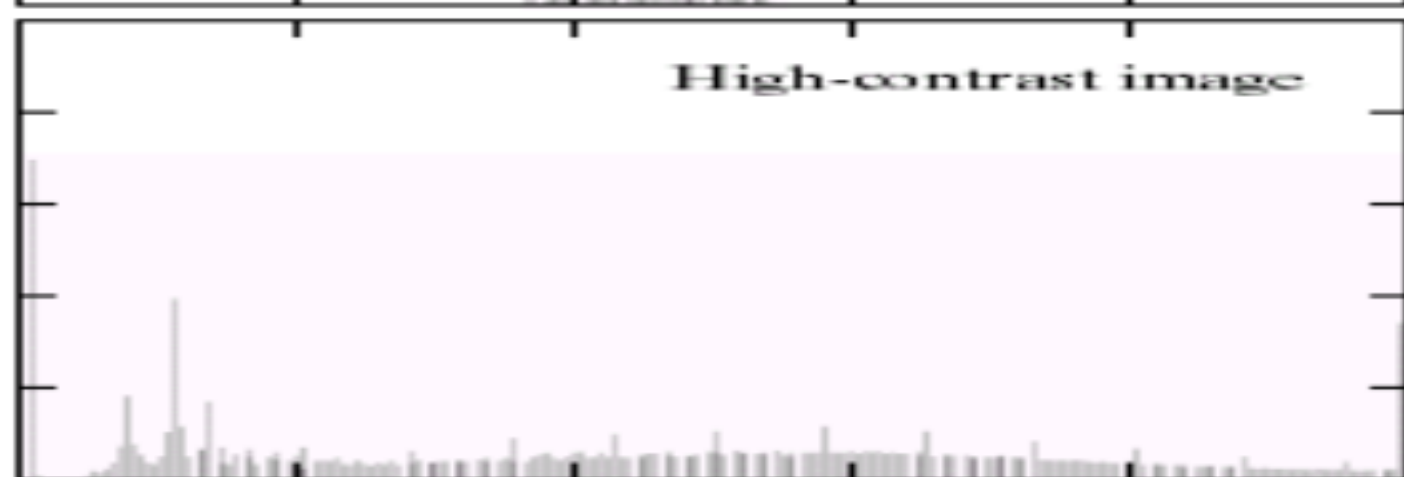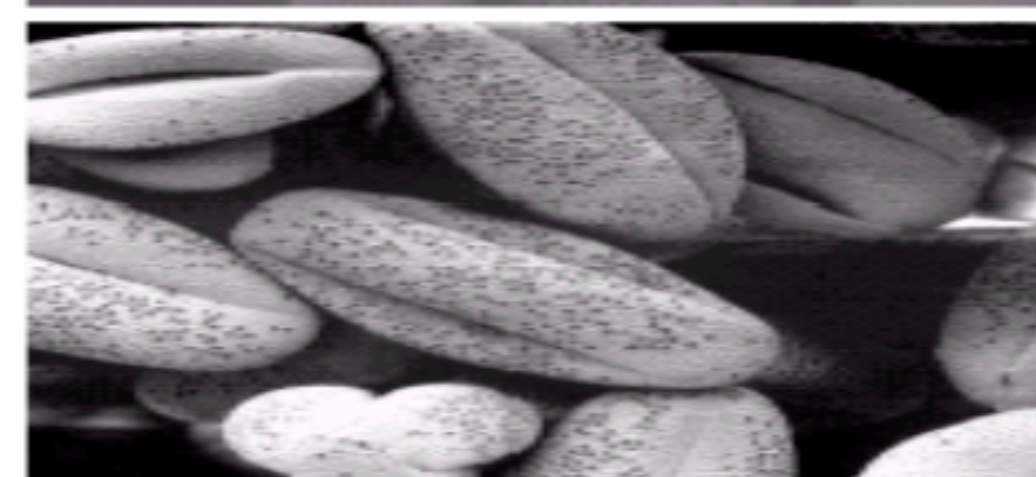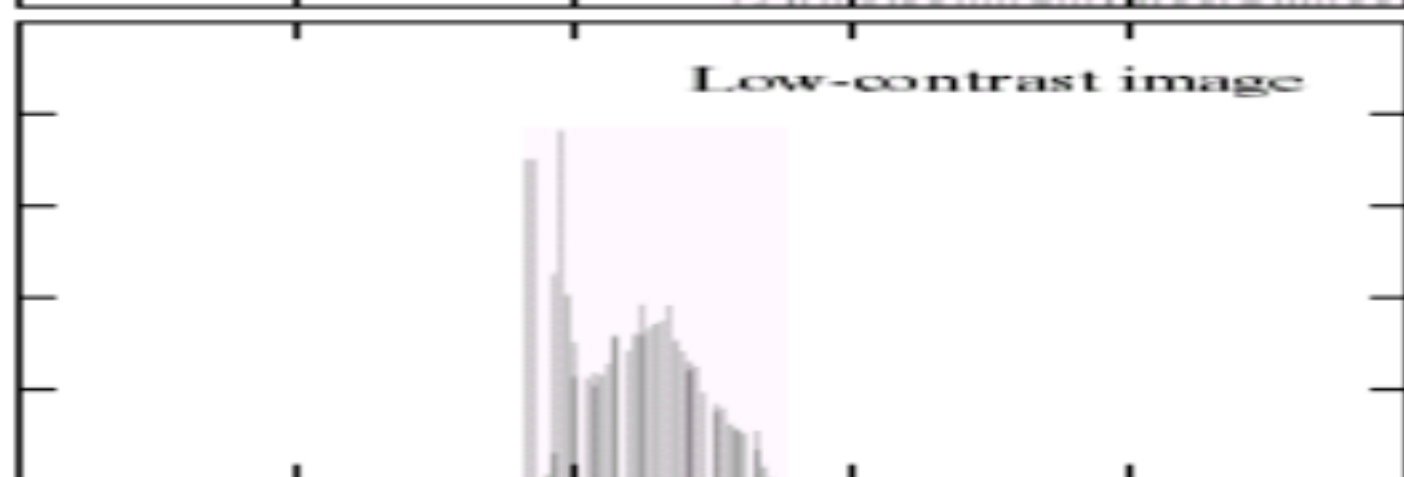
Histogram Equalization

- Histogram equalization is used to enhance contrast.
- It is not necessary that contrast will always be increase in this.
- There may be some cases were histogram equalization can be worse.
- In that cases the contrast is decreased.
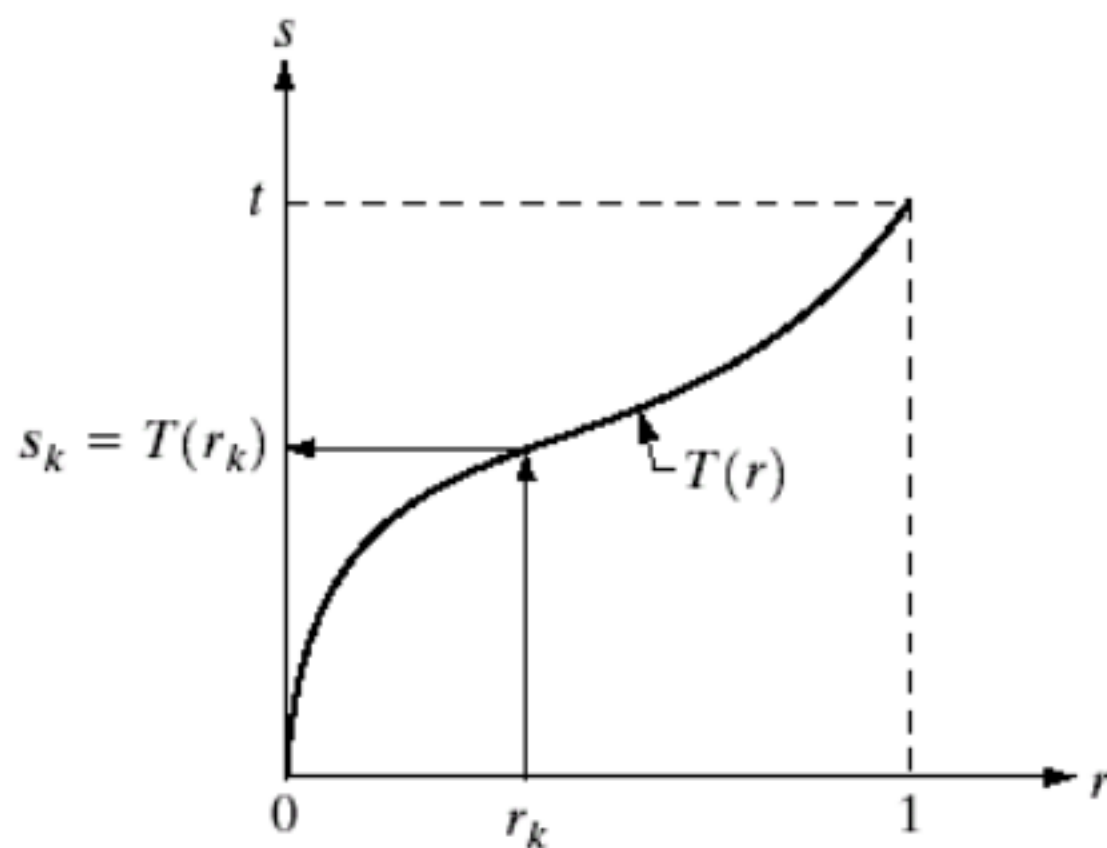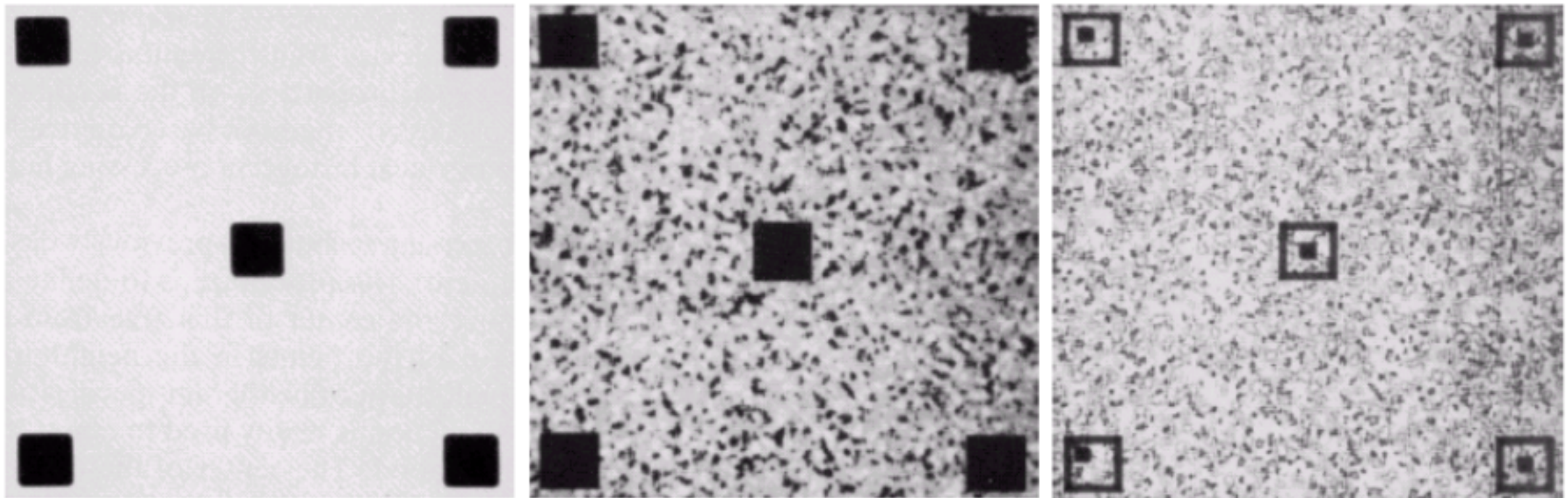
- Histogram equalization

FIGURE 3.16 A gray-level transformation function that is both single valued and monotonically increasing.

- Histogram Equalization Problem

- https://www.tutorialspoint.com/dip/
  histogram_equalization.htm

- Local enhancement
  - Histogram using a local neighborhood, for example 7*7 neighborhood

a b c

FIGURE 3.23 (a) Original image. (b) Result of global histogram equalization. (c) Result of local histogram equalization using a 7×7 neighborhood about each pixel.

- Histogram using a local 3*3 neighborhood

Thank you