

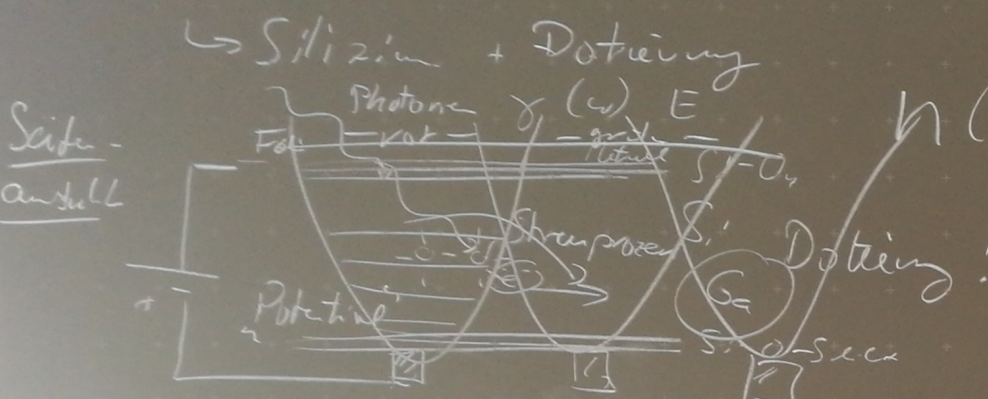
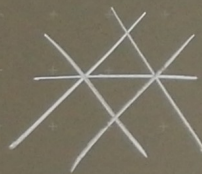
Sensor: CCD (Charged Coupled Device)

CMOS $\left. \begin{array}{l} \text{VDD} \\ \text{GND} \\ \text{CLK} \end{array} \right\}$

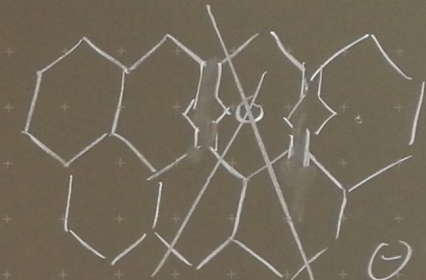
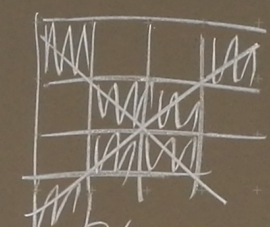
Photoeffekt \rightarrow Strom

$$n(x) \sim n(e) \pm \sqrt{n(e)}$$

Photonenrauschen

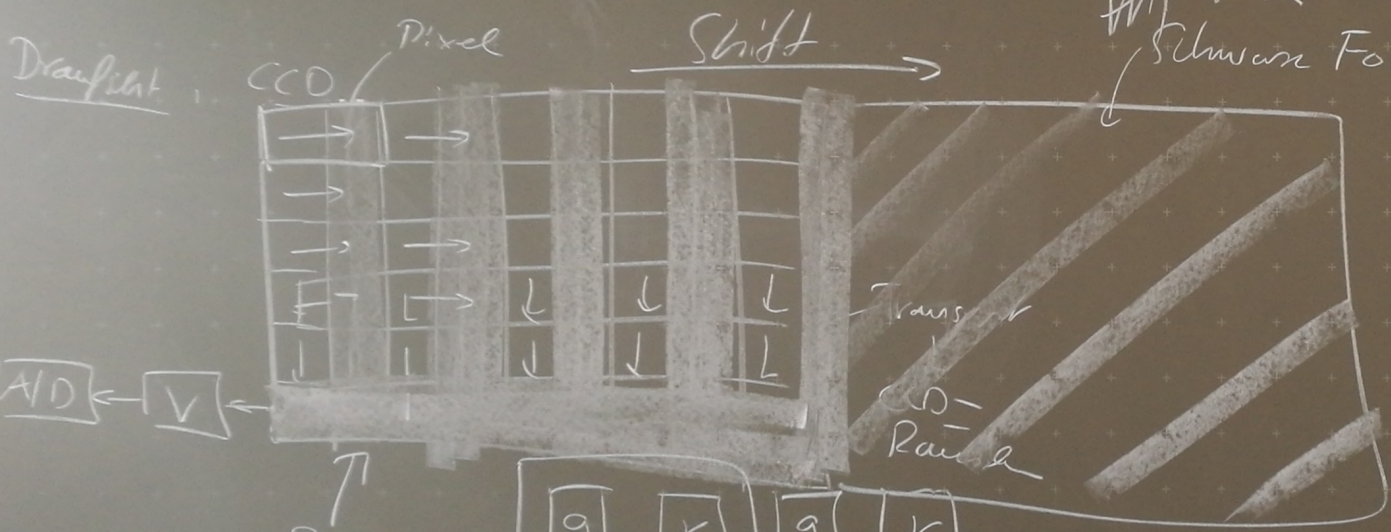


Seitenansicht

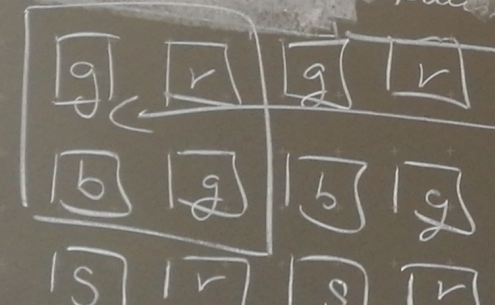
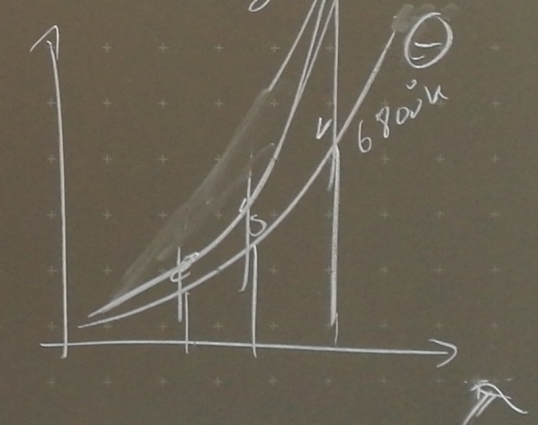


\ominus 9800K

Draufsicht



- Photonenrauschen
- CCD-Rausch
- Verstärker-Rausch
- Dunkelstrom-Rausch
- Dunkelstrom, Rausch



Bayer-Maske

Schwarze Folie

Natürliche Bilder

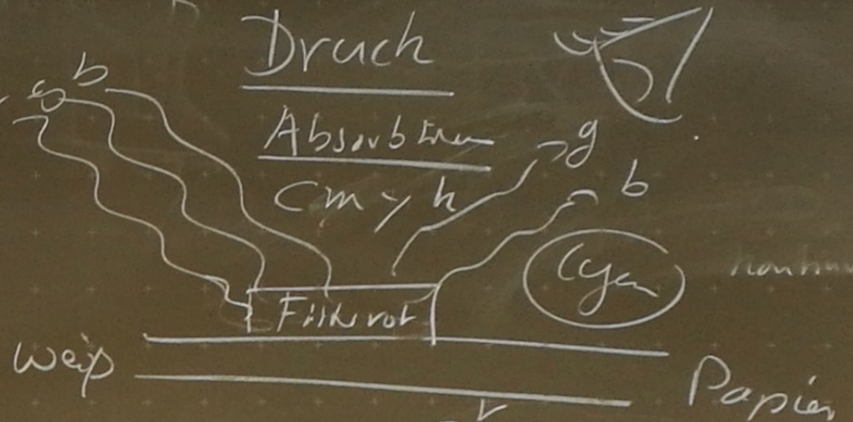
↳ Beleuchtungsfunktion →

↓ Sensor

Digitalisierung

Emmission
rgb

rgb ↔ cmyk



Sensoren

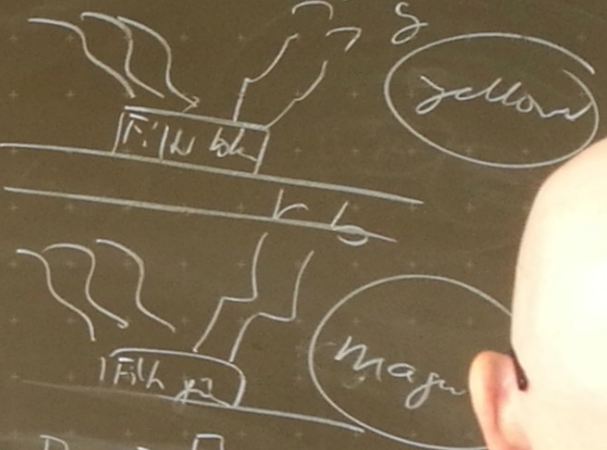
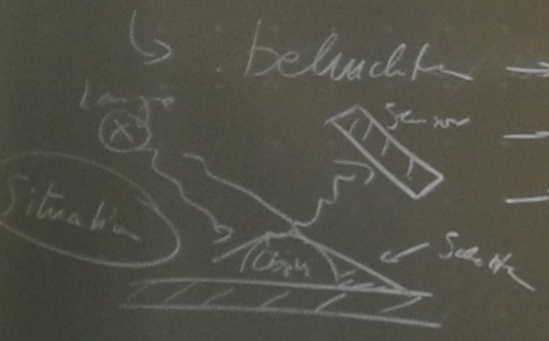
→ Auflösung ein

$$\begin{pmatrix} r \\ g \\ b \end{pmatrix} = \begin{pmatrix} 0,5 \\ 0,4 \\ 0,3 \end{pmatrix}$$

$$\begin{pmatrix} c \\ m \\ k \end{pmatrix} = \begin{pmatrix} 1-0,2 \\ 1-0,1 \\ 1-0 \\ \min(r,g,b) \\ = 0,3 \end{pmatrix}$$

- ↳ Durchleuchtung (Röntgen) → Absorbieren
- Streuung
- Reflexion
- Rauschen

- ↳ Betrachtung → Reflexion
- Schatten
- Oberfläche



1 → 1 → 1 → 1

c	y	m	c	y	m	c	y	m
c	y	k	c	y	k	c	y	k