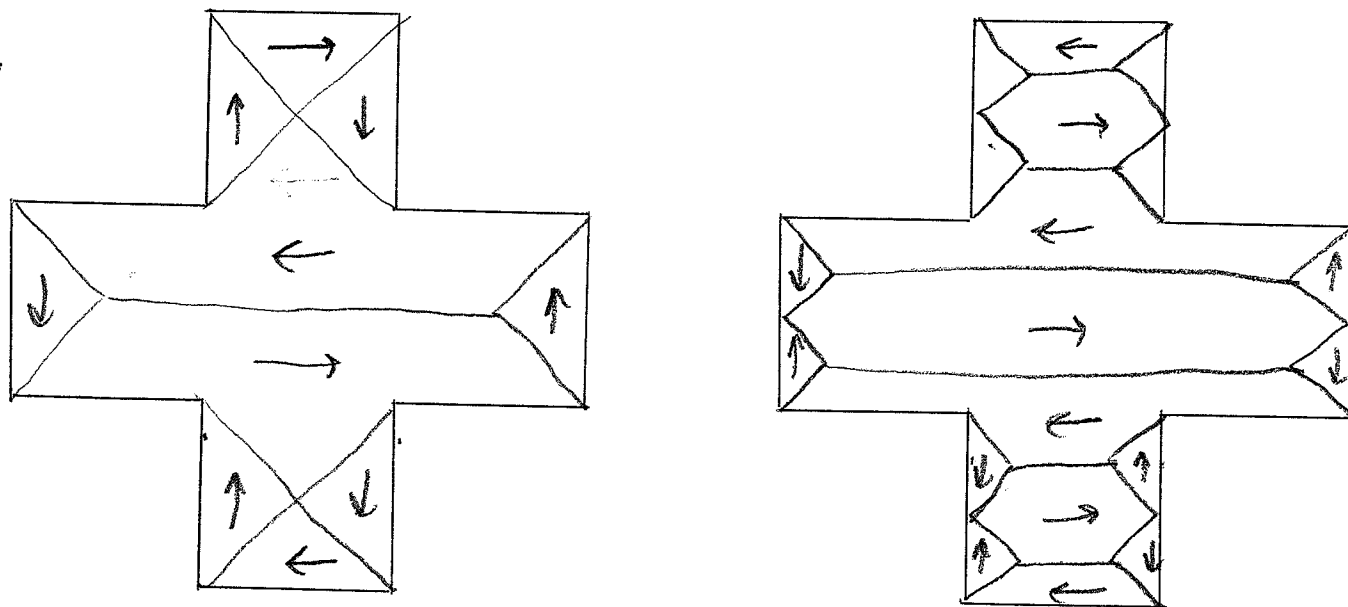


A. Recall Ni has magnetization of about $0.6 \mu_B$ per atom. Fe has atomic number 2 less than Ni, $\therefore M = 1.6 \mu_B/\text{atom}$

Recall $\mu_B = 9.27 \times 10^{-21} \text{ ergs/G}$

$$\therefore M = 1350 \frac{\text{emu}}{\text{cm}^3} \quad \text{or} \quad M = 1350 \frac{\text{kA}}{\text{m}}$$

B.



C. Domain walls will mostly (or completely) be gone. For example, there may be one large domain covering whole sample with magnetization bending at the edge.

D. Recall $H_{ex} = \frac{-J}{M_s t_f} \rightarrow H_{ex} = 250 \text{ Oe}$

$$E. K_{AV} V = (10^6 \text{ ergs/cm}^3) (5 \text{ nm})^3 \cdot \pi = 3.9 \times 10^{-13} \text{ ergs} \\ = 0.25 \text{ eV}$$

\therefore AF grains are superparamagnetic.

\therefore Exchange bias vanishes and domains redevelop.