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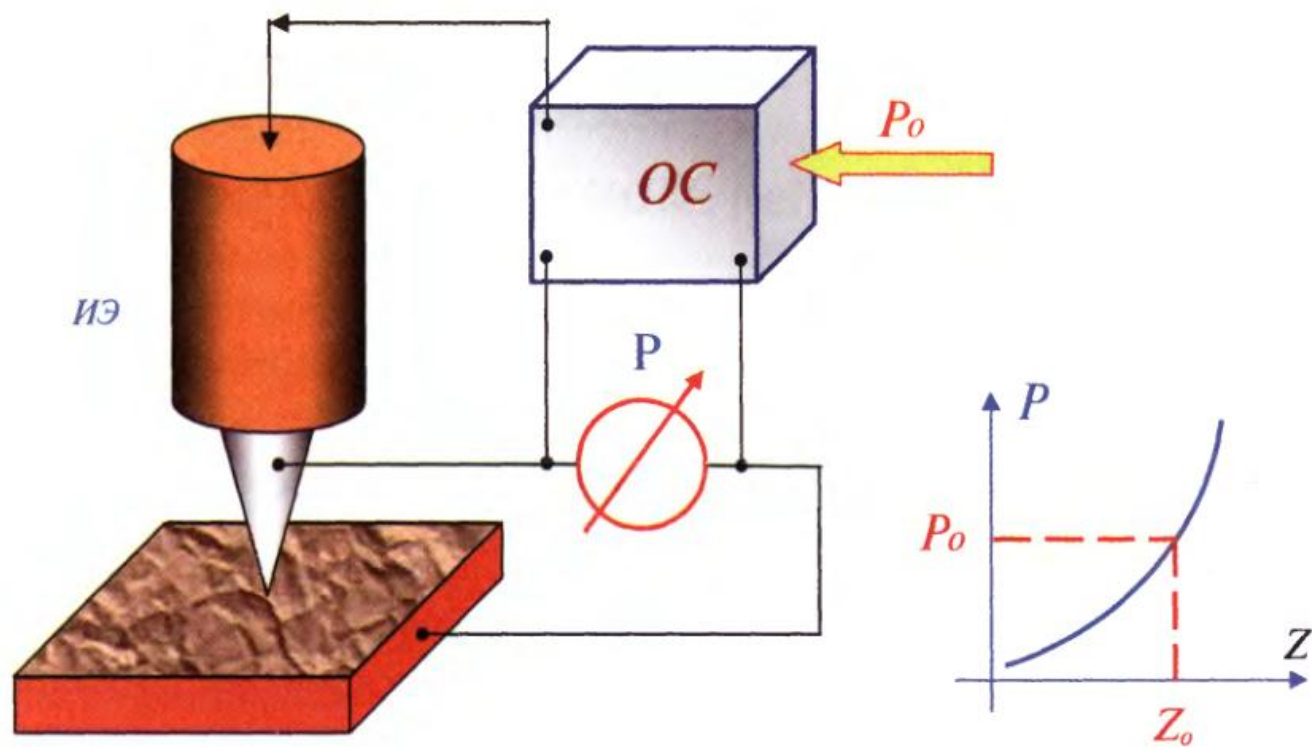


Рис. 1. Схема организации системы обратной связи зондового микроскопа.

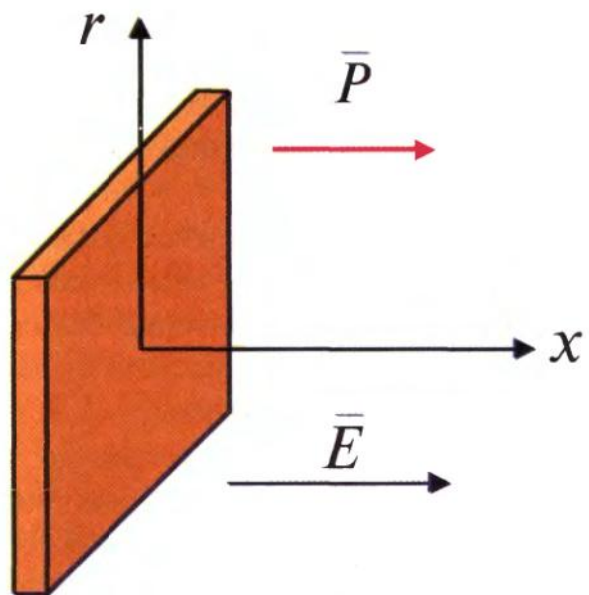


Рис. 2. Пластина из пьезокерамики во внешнем электрическом поле.



Рис. 3. Трубчатый пьезоэлемент.

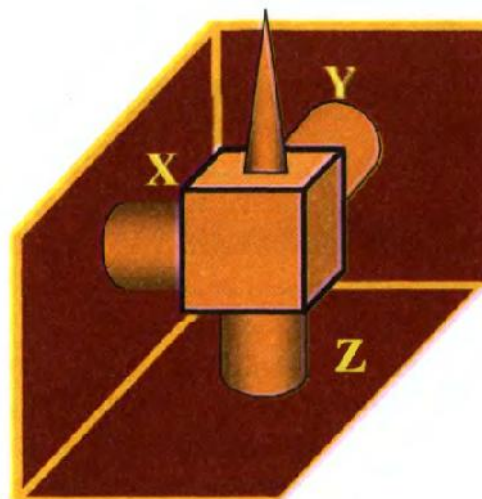


Рис. 4. Сканирующий элемент в виде трипода, собранный на трубчатых пьезоэлементах.

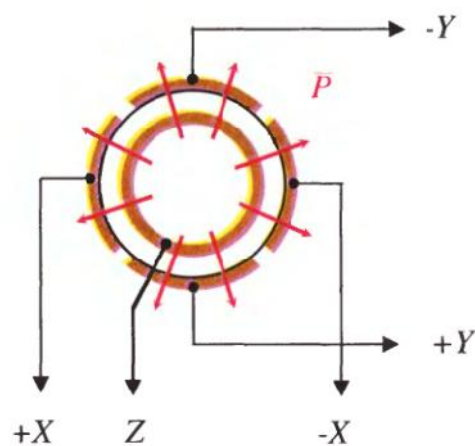


Рис. 5. Трубчатый пьезосканер.

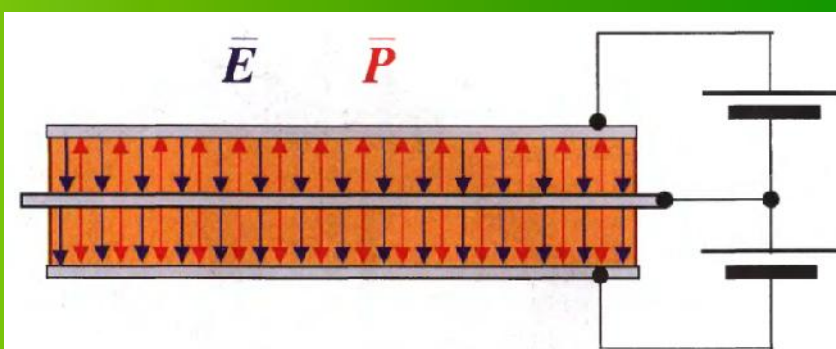
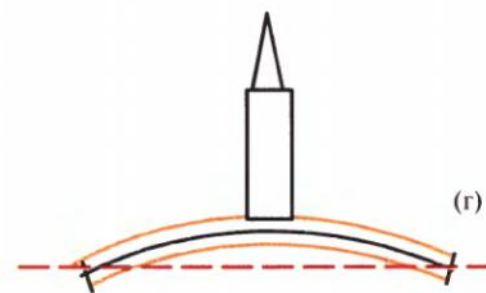
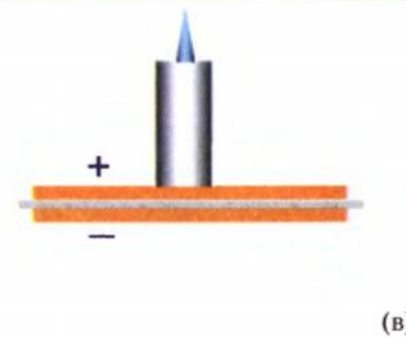
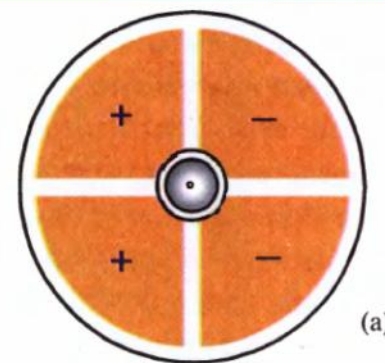
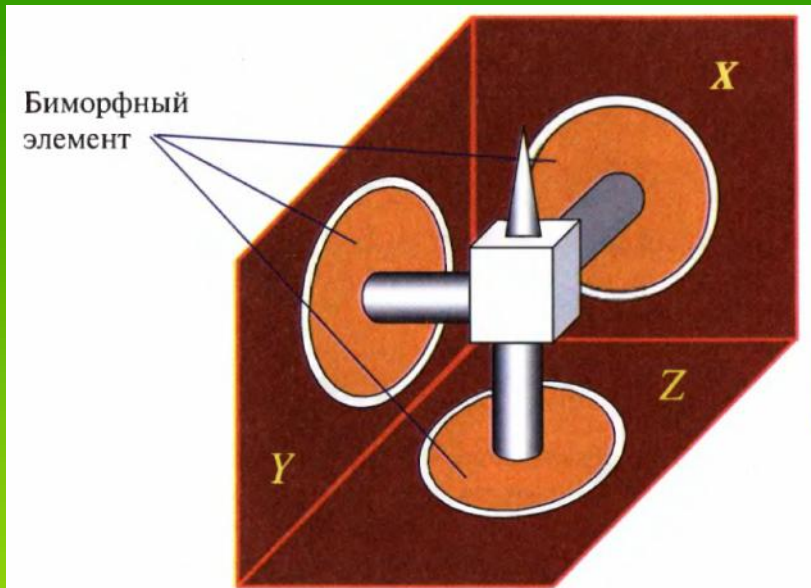
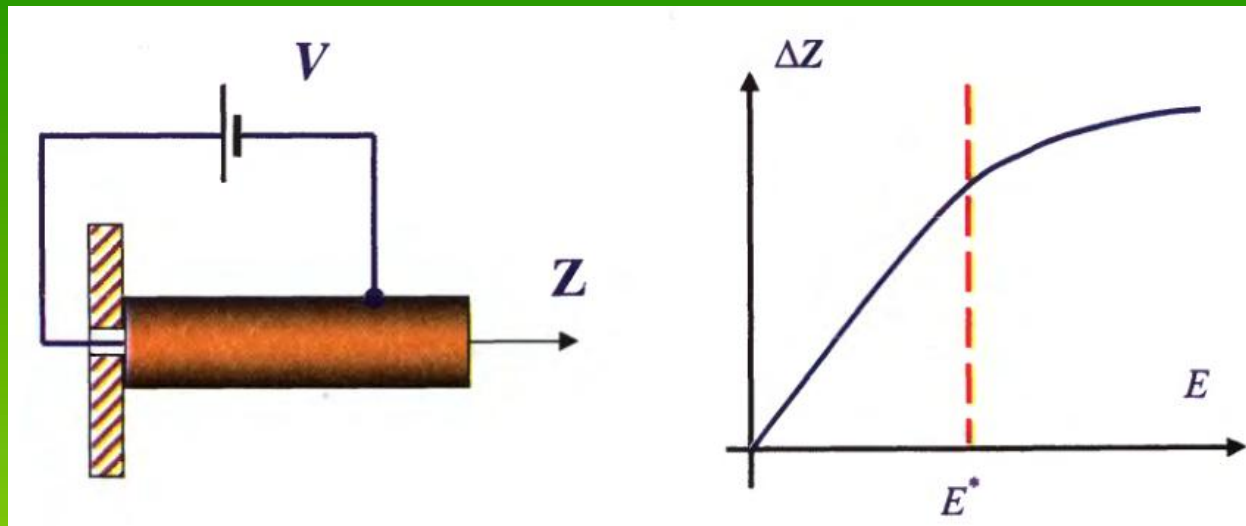
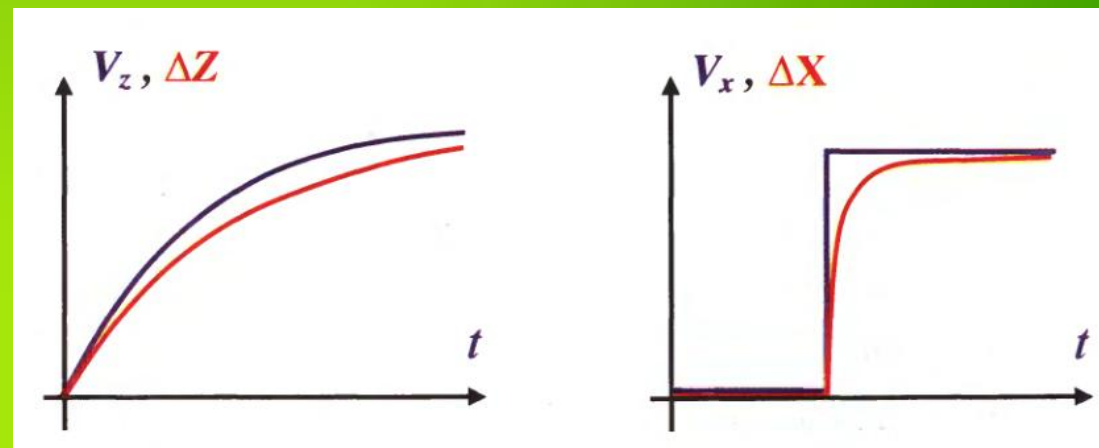


Рис. 6. Устройство биморфного пьезоэлемента.





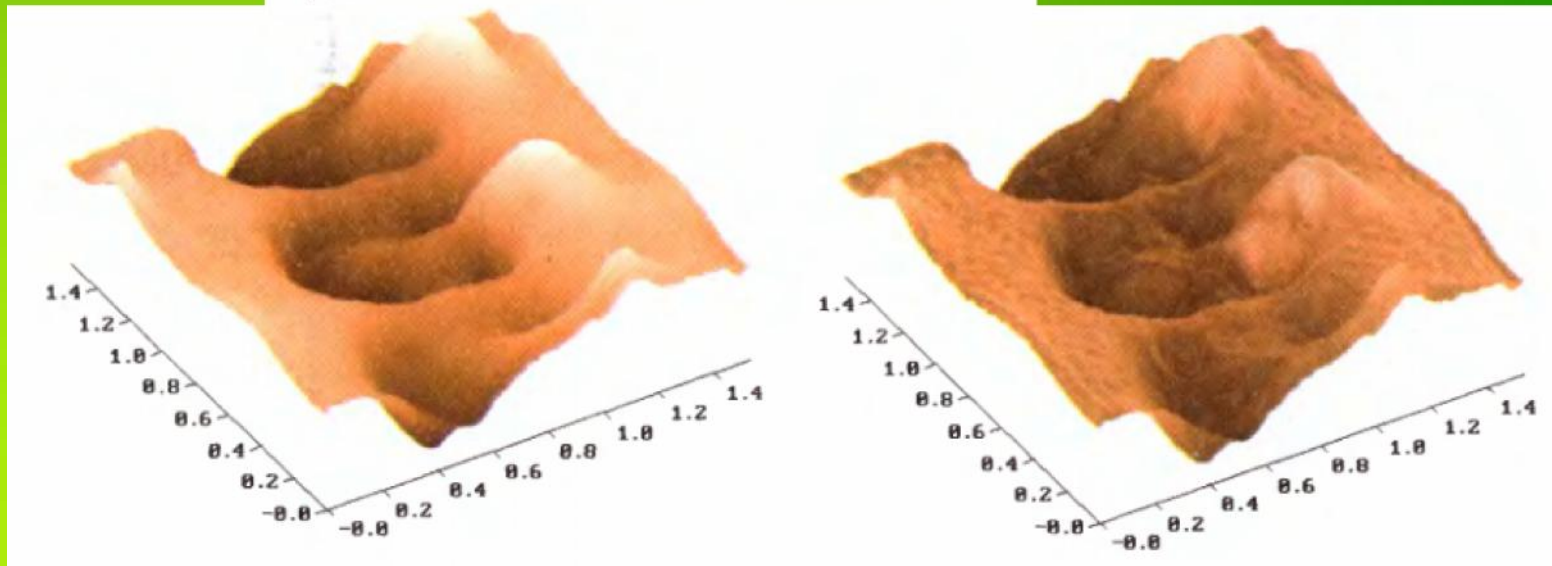
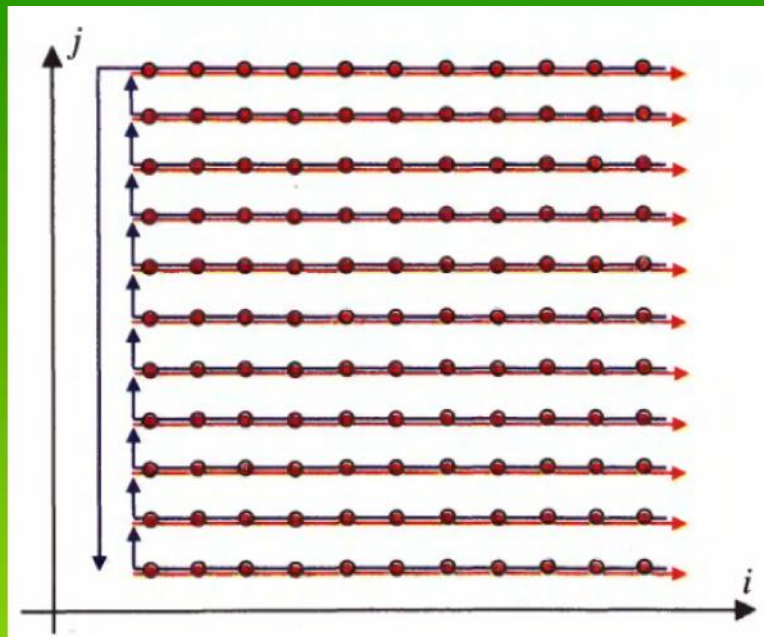
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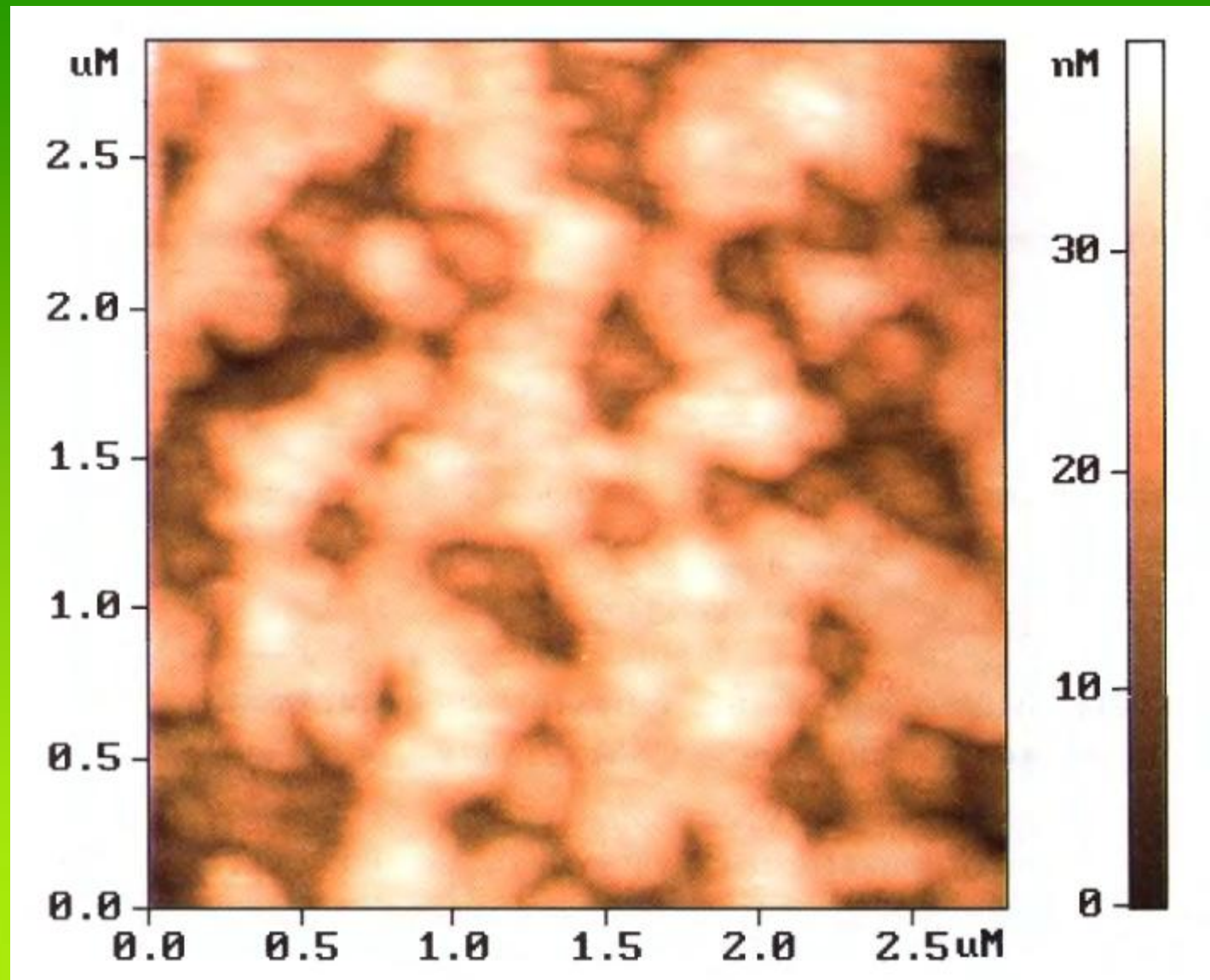


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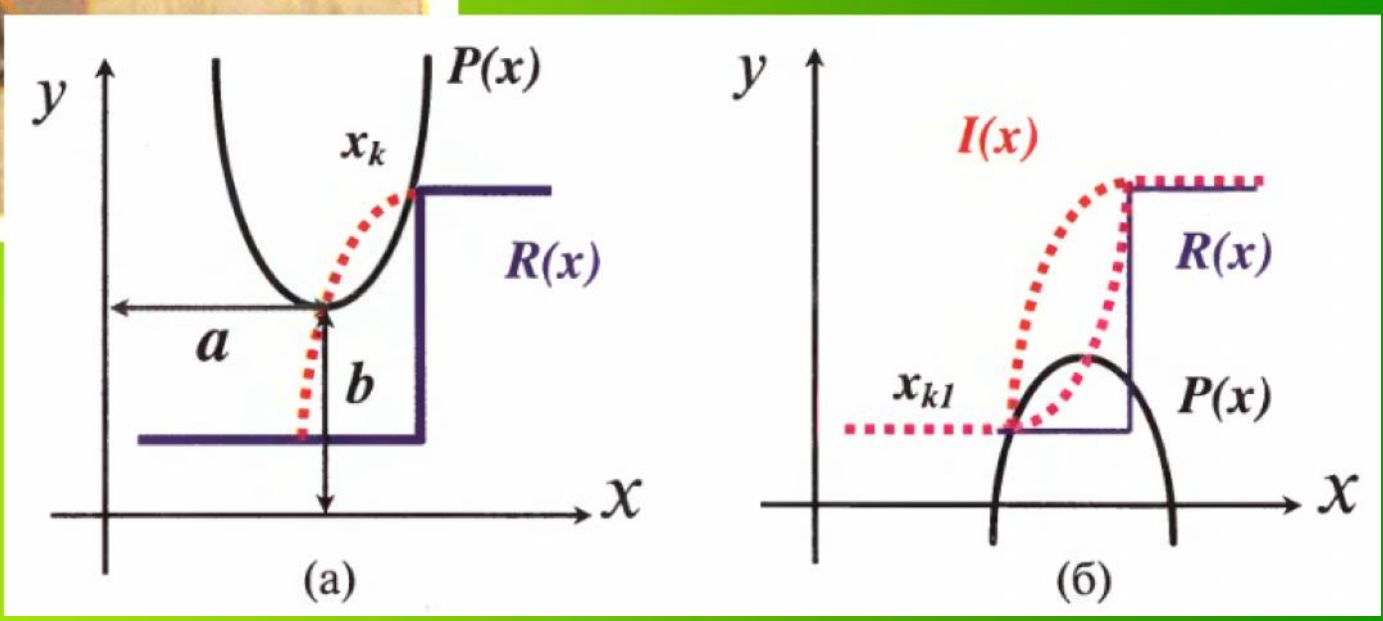
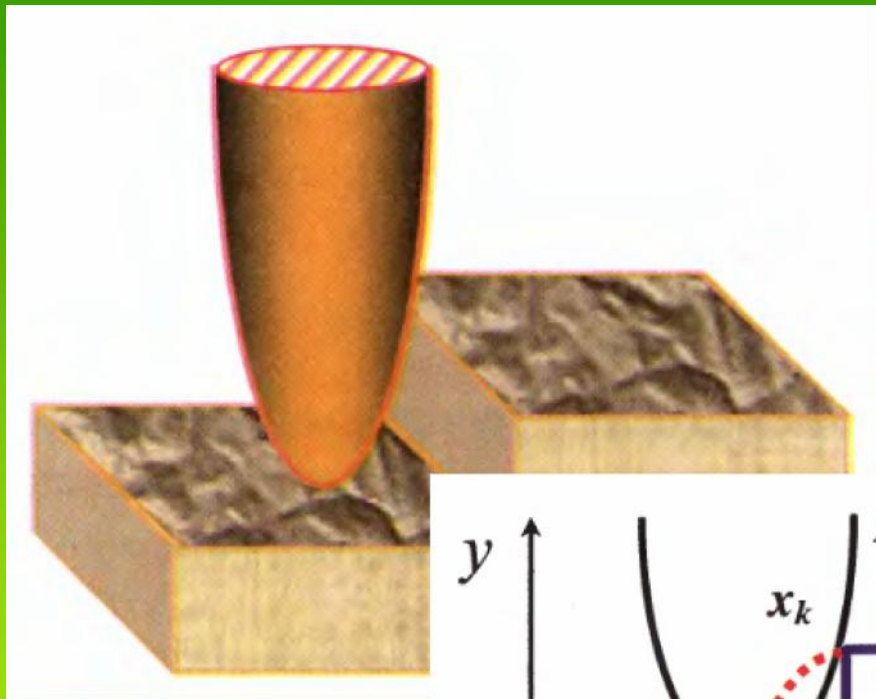
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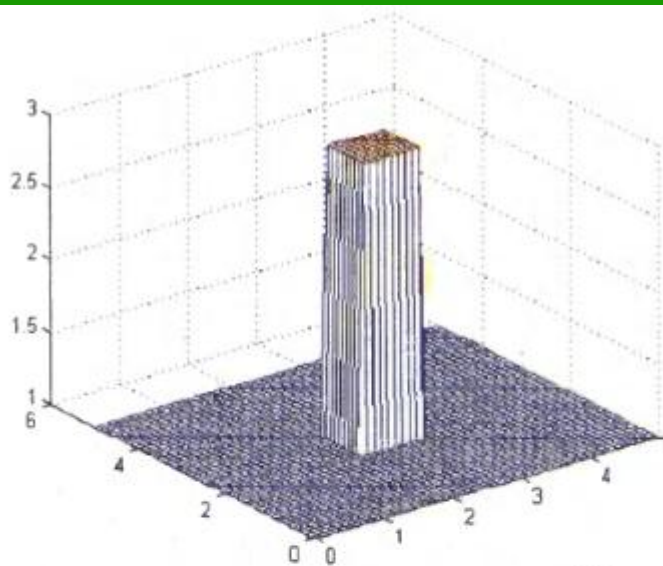
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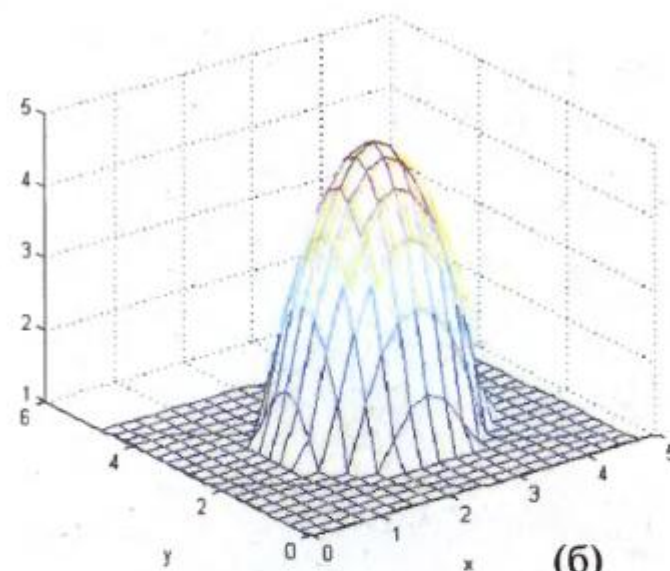




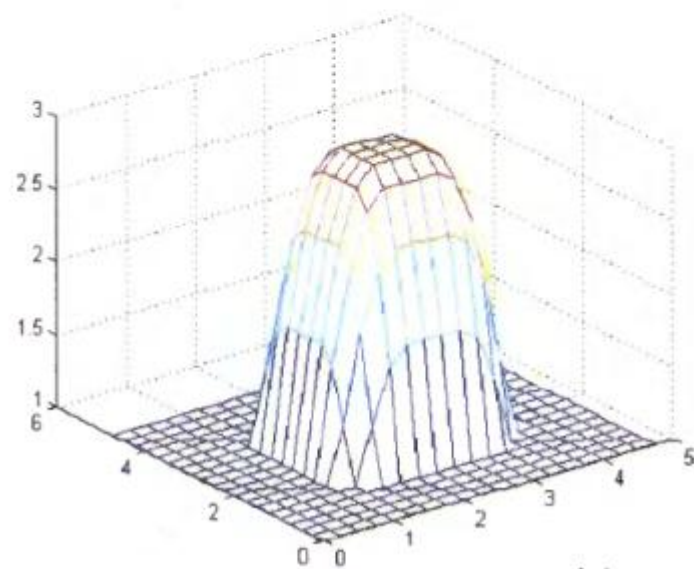




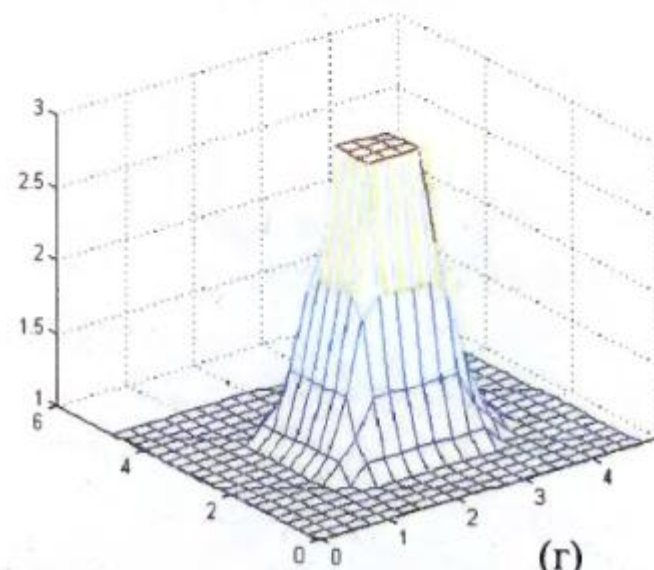
(a)



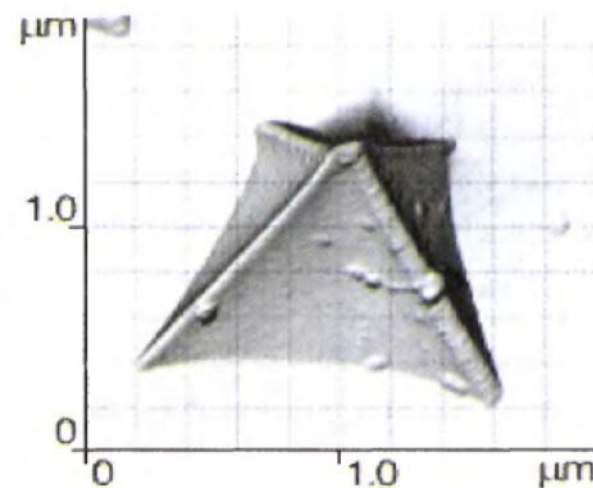
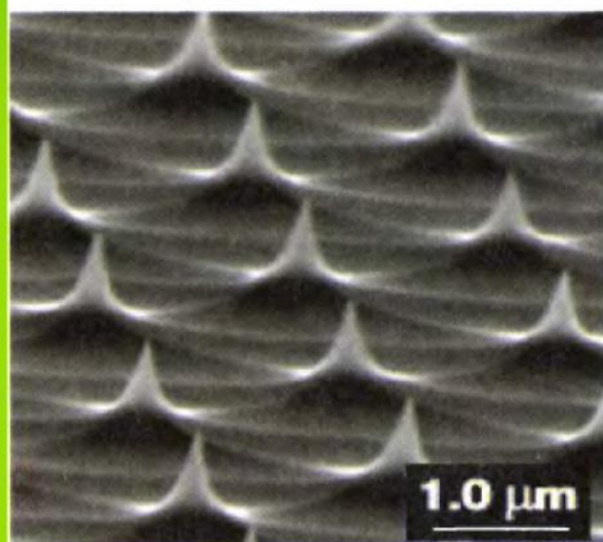
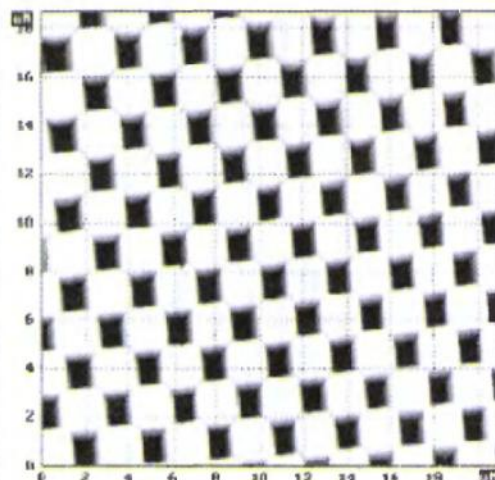
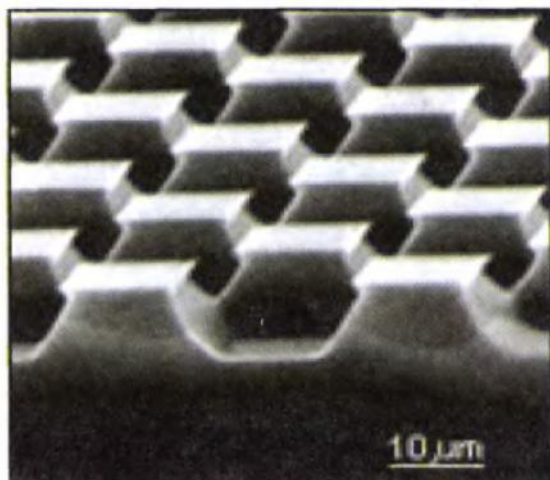
(b)

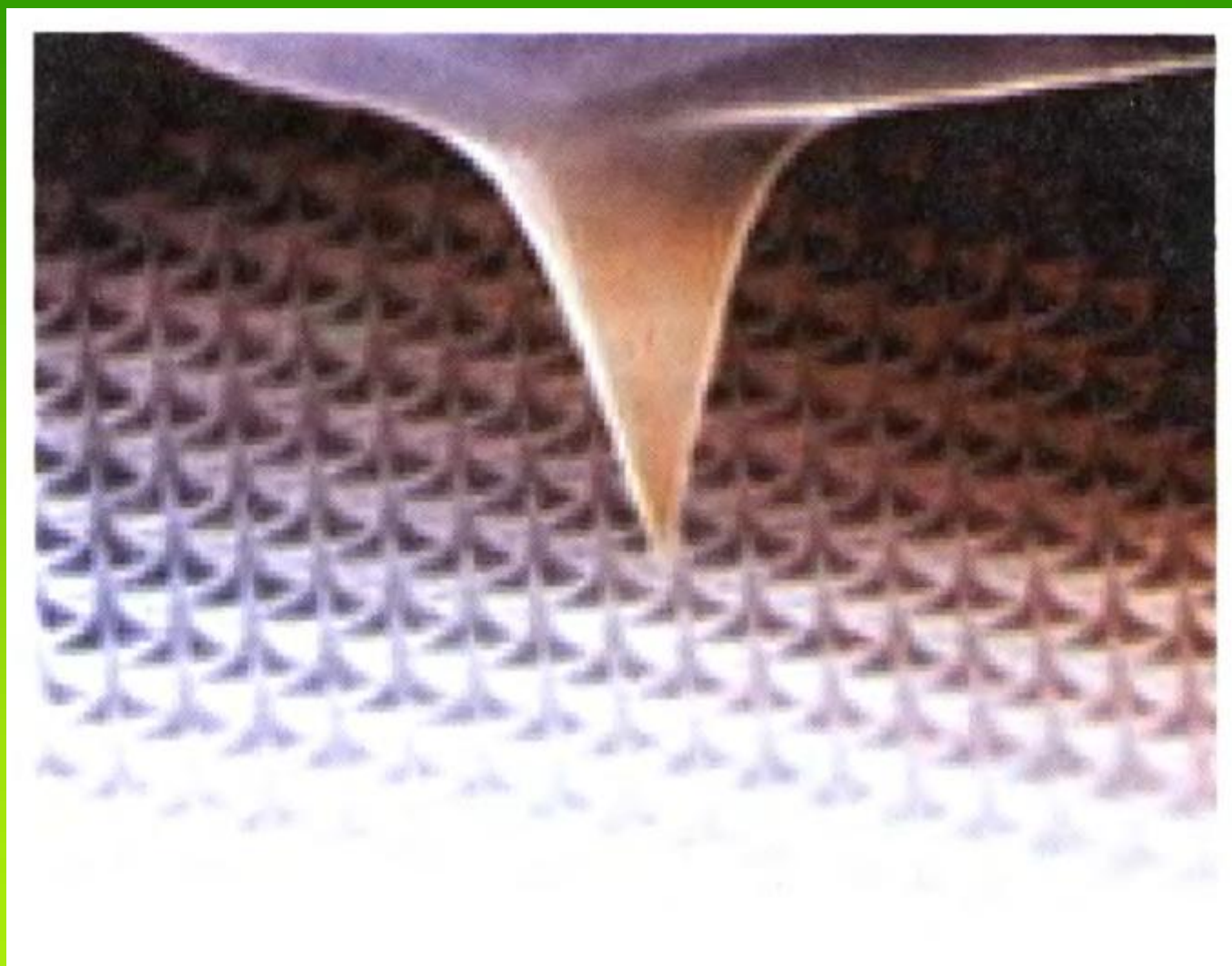


(B)



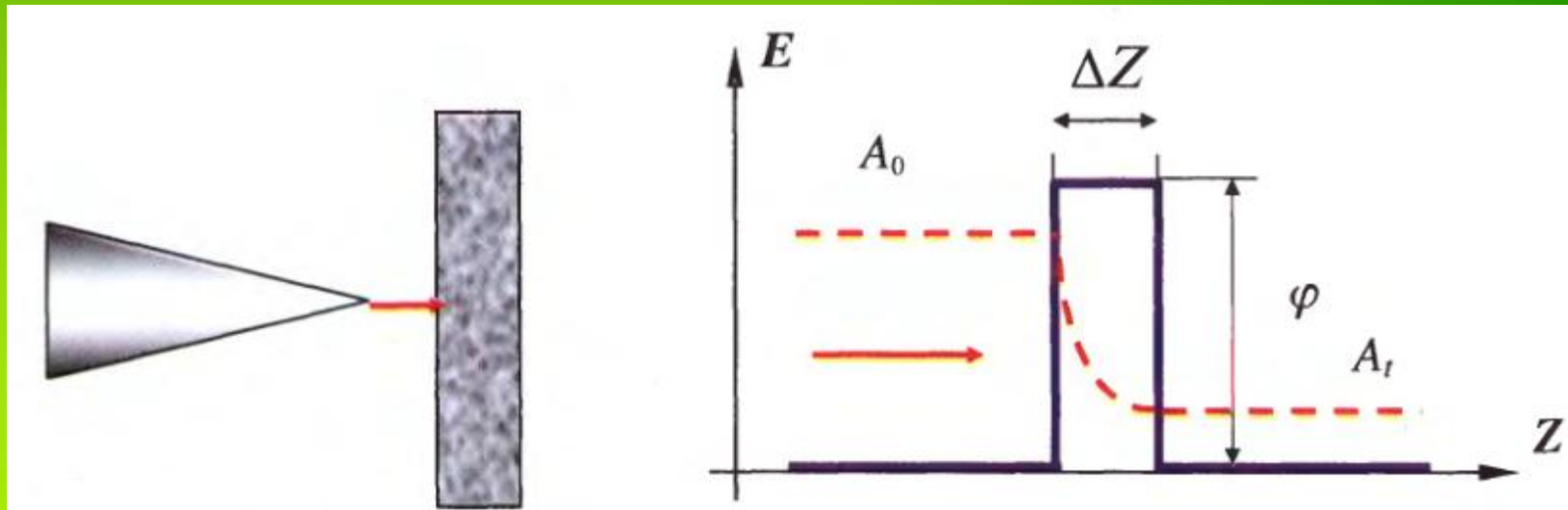
(r)







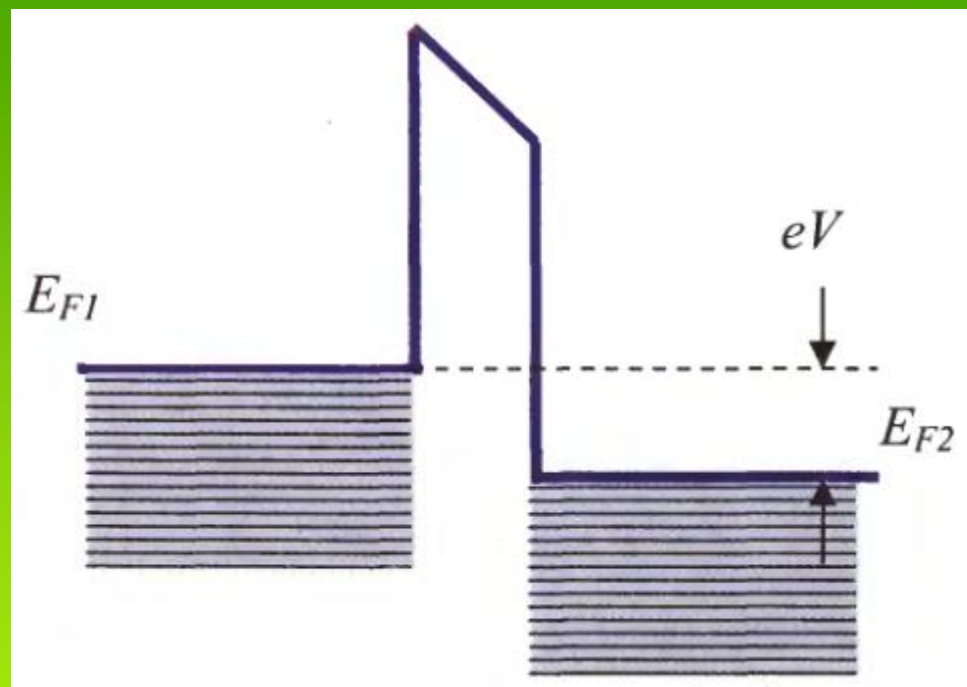
$$\varphi^* = \frac{1}{2}(\varphi_P + \varphi_S).$$



$$k = \frac{4\pi\sqrt{2m\varphi^*}}{h},$$

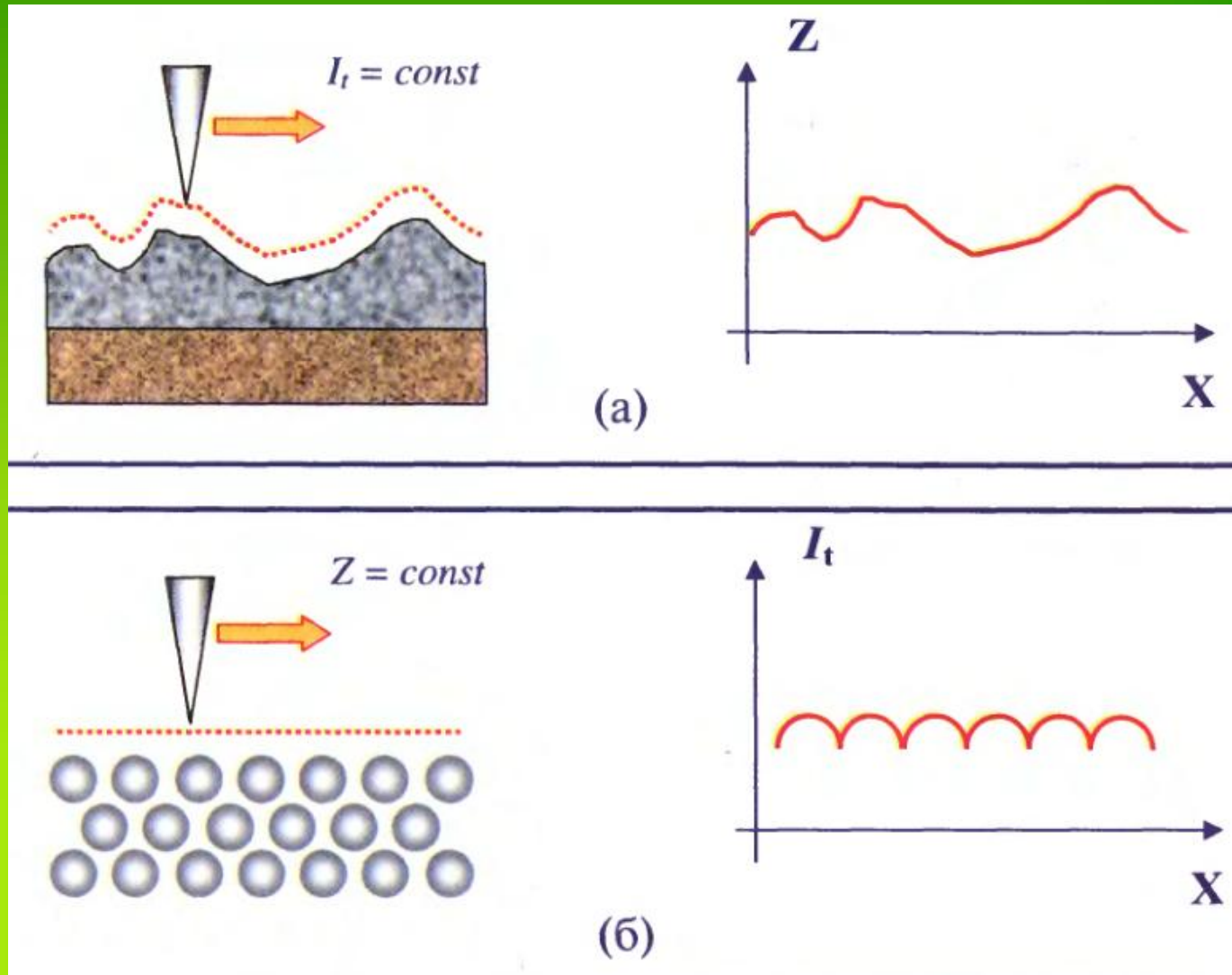
$$j_t = j_0 \frac{A\sqrt{\varphi^*} eV\Delta Z}{2} \exp(-A\sqrt{\varphi^*}\Delta Z) = \frac{e^2\sqrt{2m\varphi^*}}{h^2} \cdot \frac{V}{\Delta Z} \exp(-\frac{4\pi}{h}\sqrt{2m\varphi^*}\Delta Z).$$

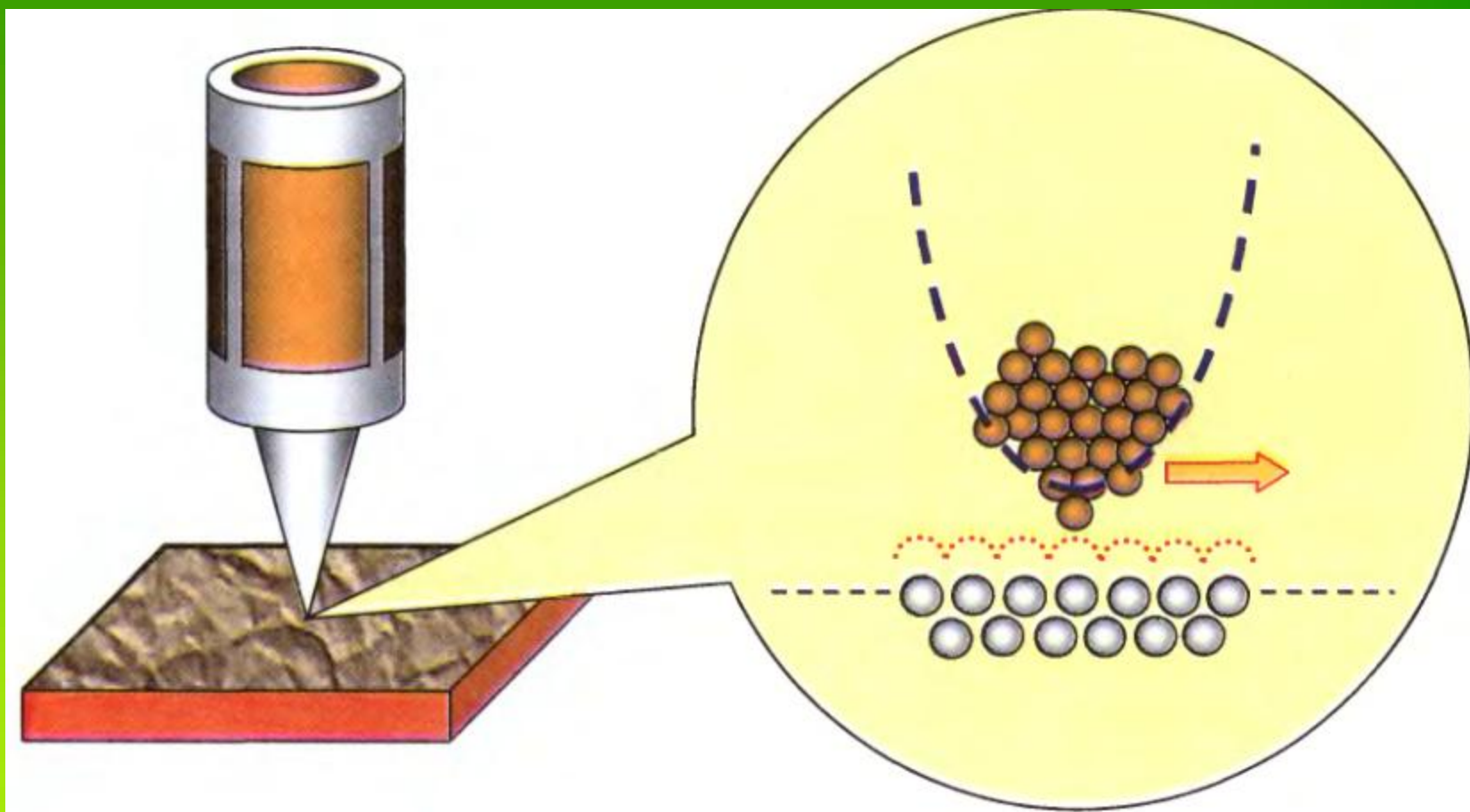
$$j_t = j_0(V) e^{-\frac{4\pi}{h}\sqrt{2m\varphi^*}\Delta Z}$$

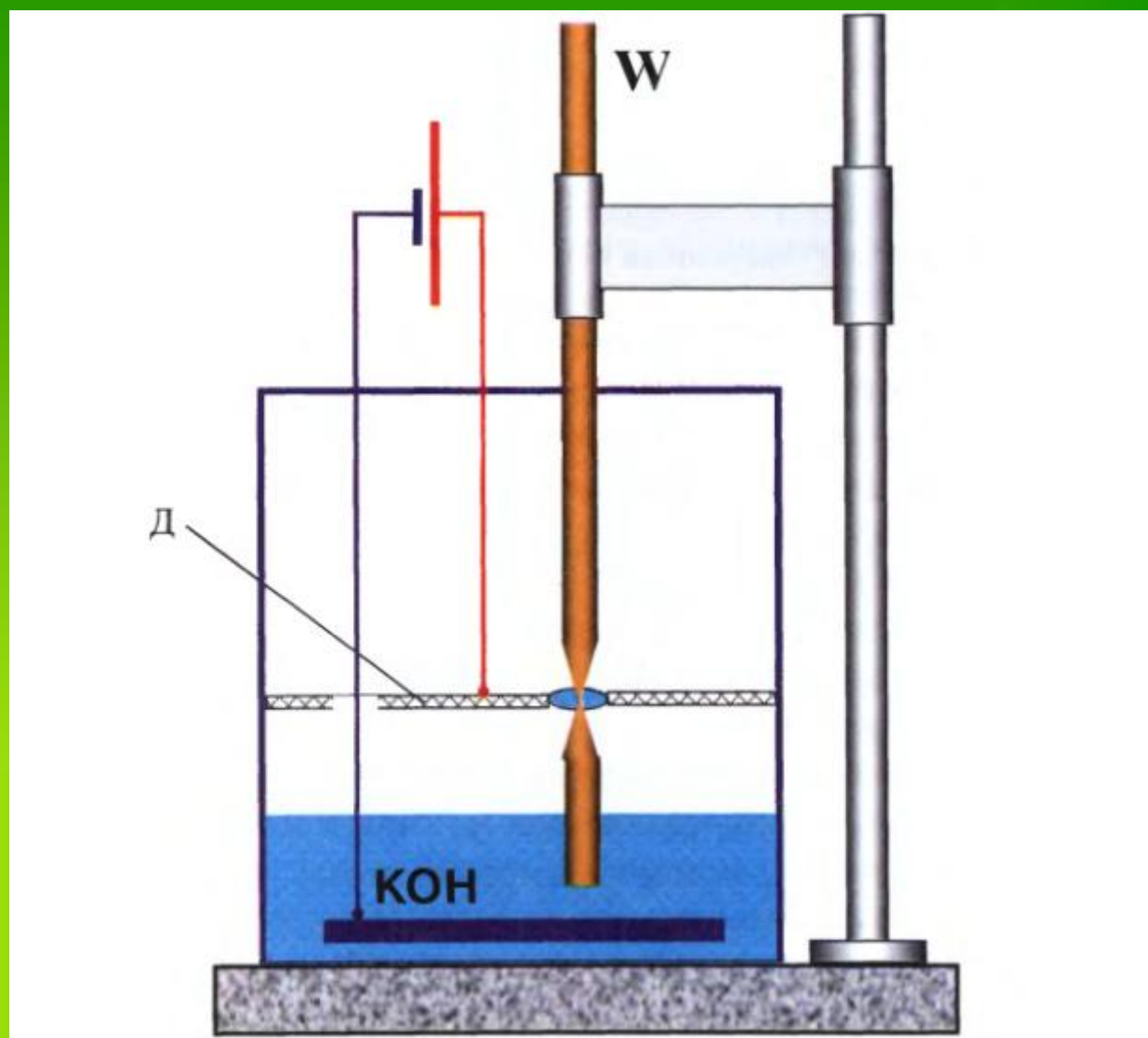


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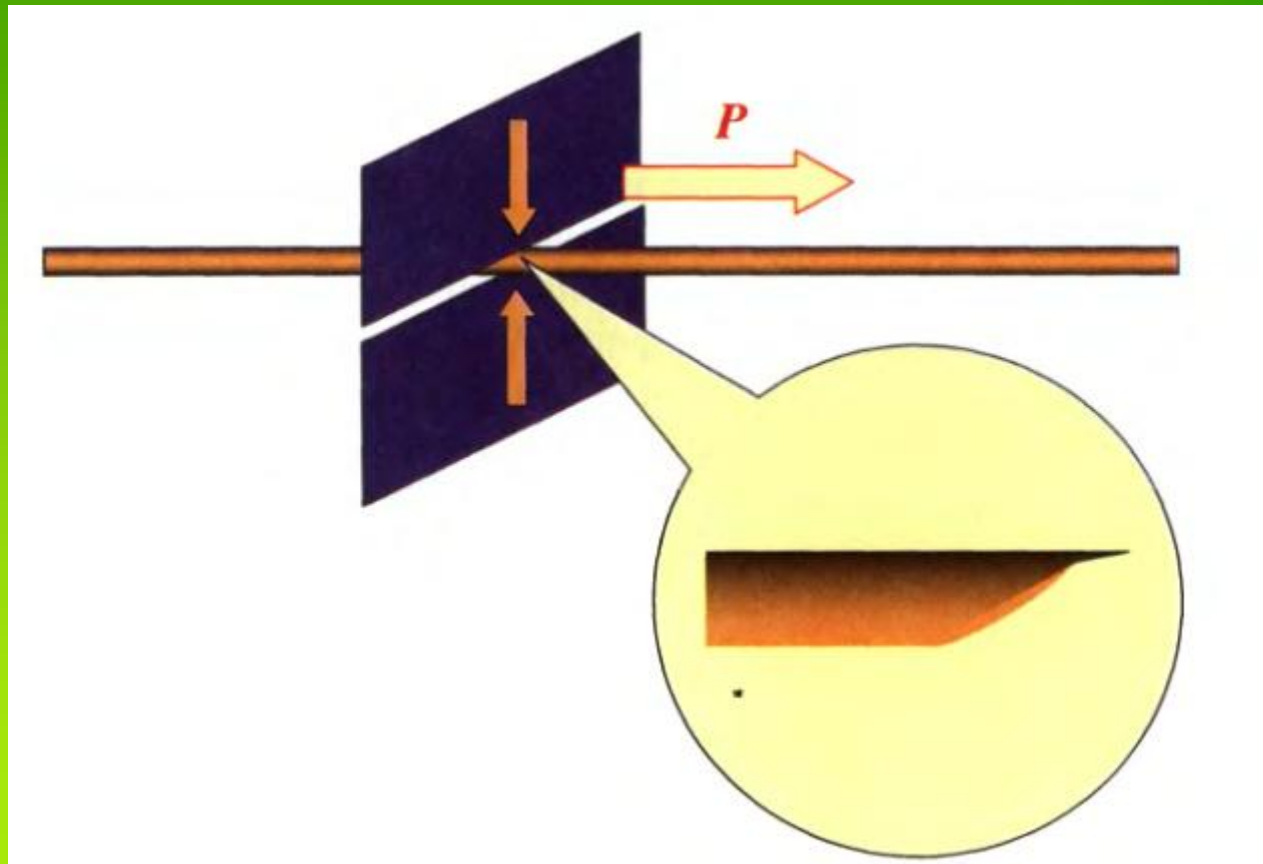
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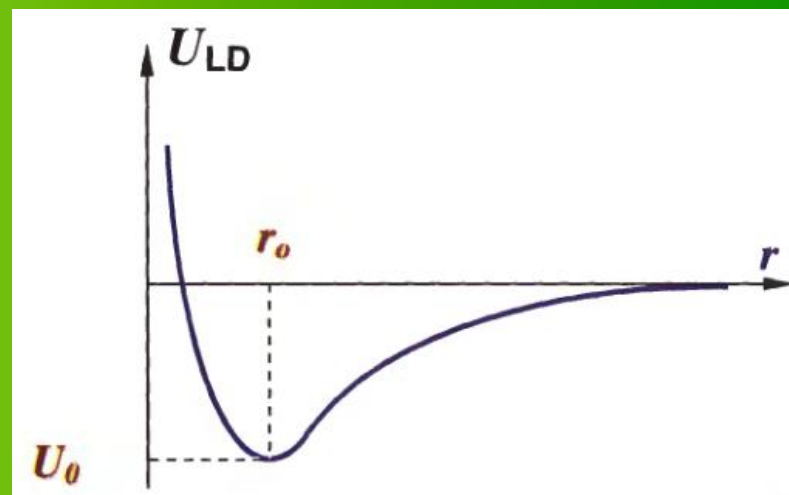


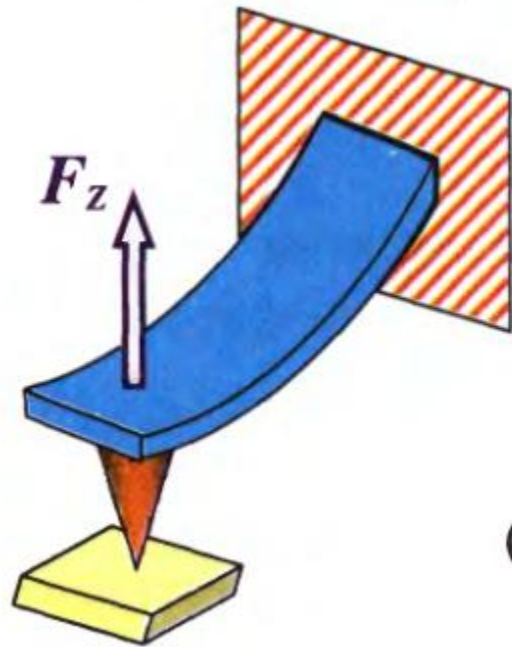


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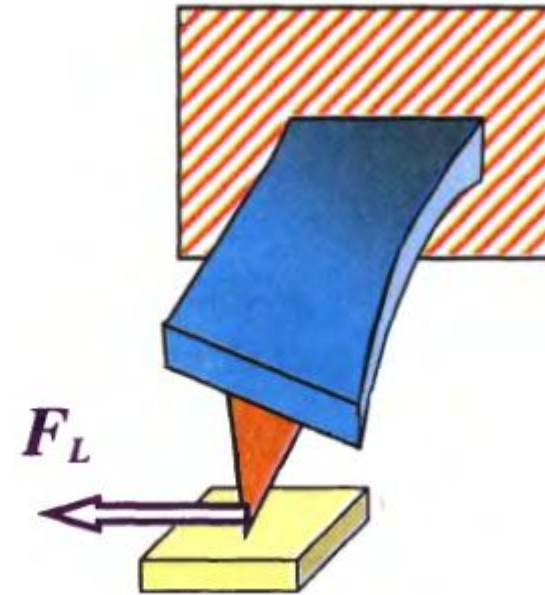


$$U_{LD}(r) = U_0 \left\{ -2 \left(\frac{r_0}{r} \right)^6 + \left(\frac{r_0}{r} \right)^{12} \right\}$$

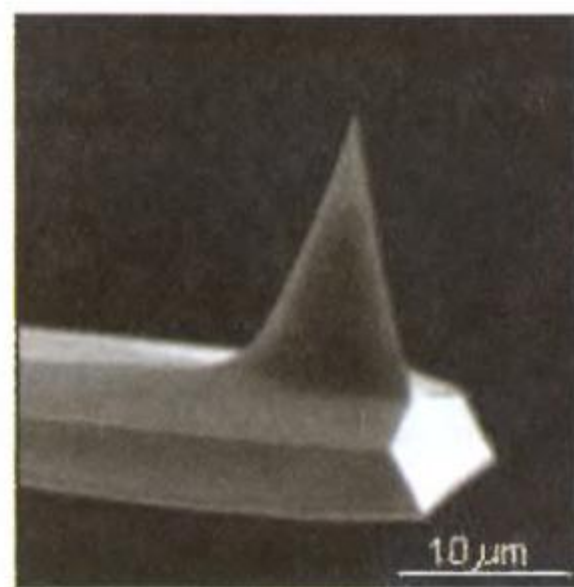
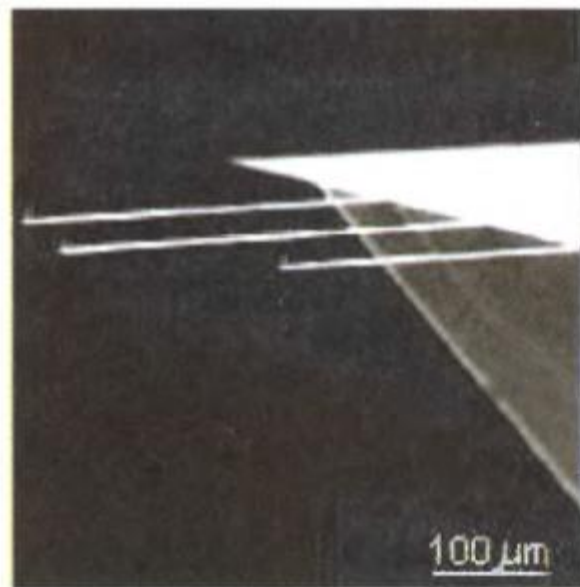
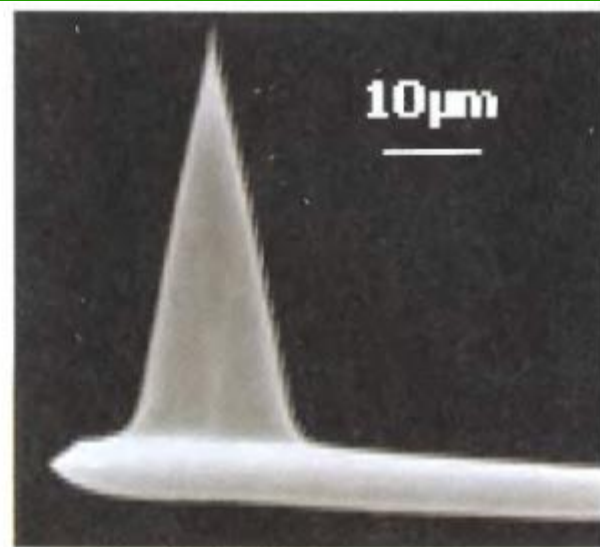
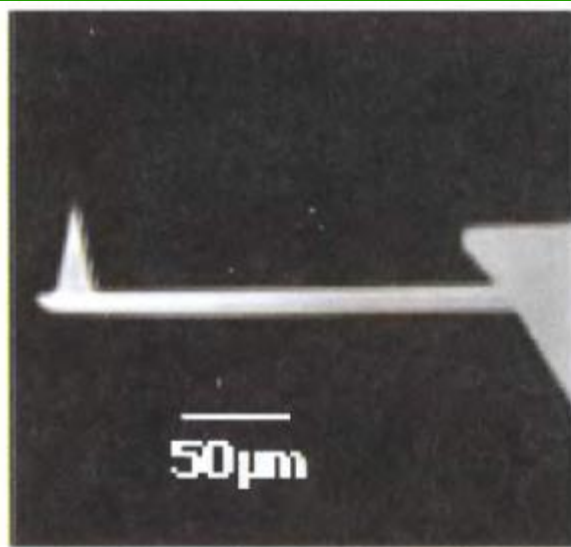


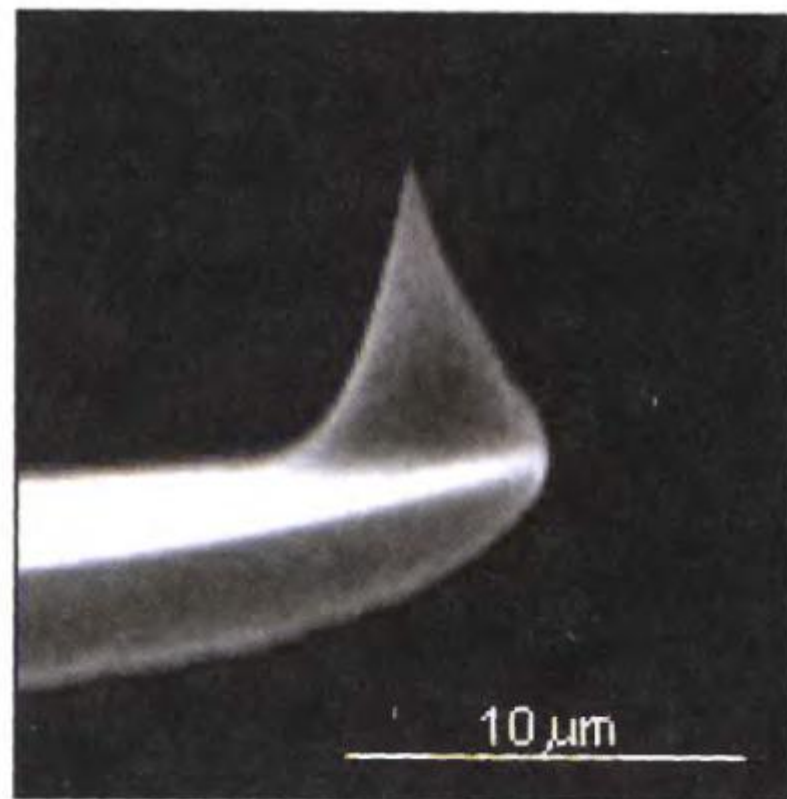
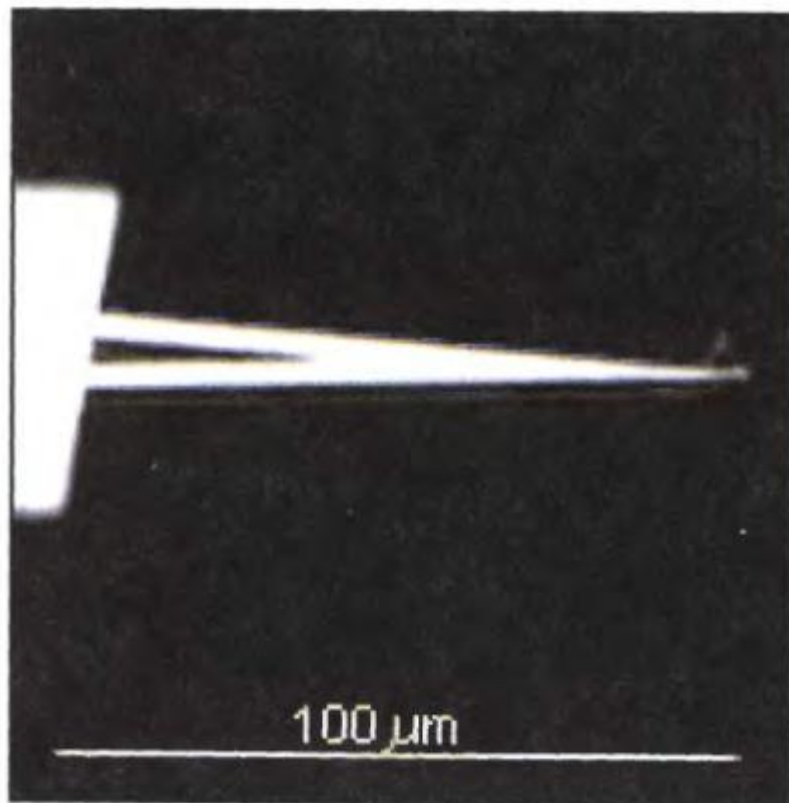


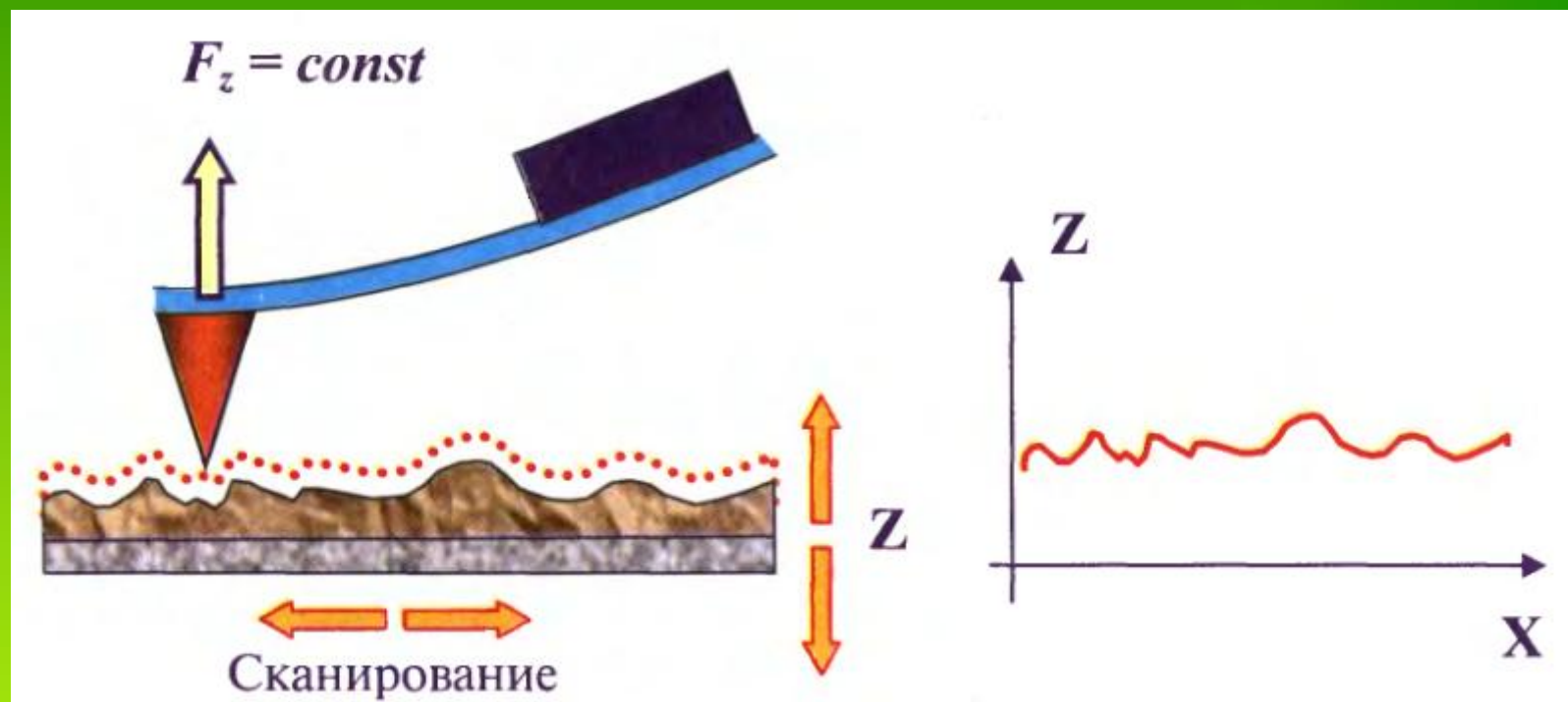
(a)

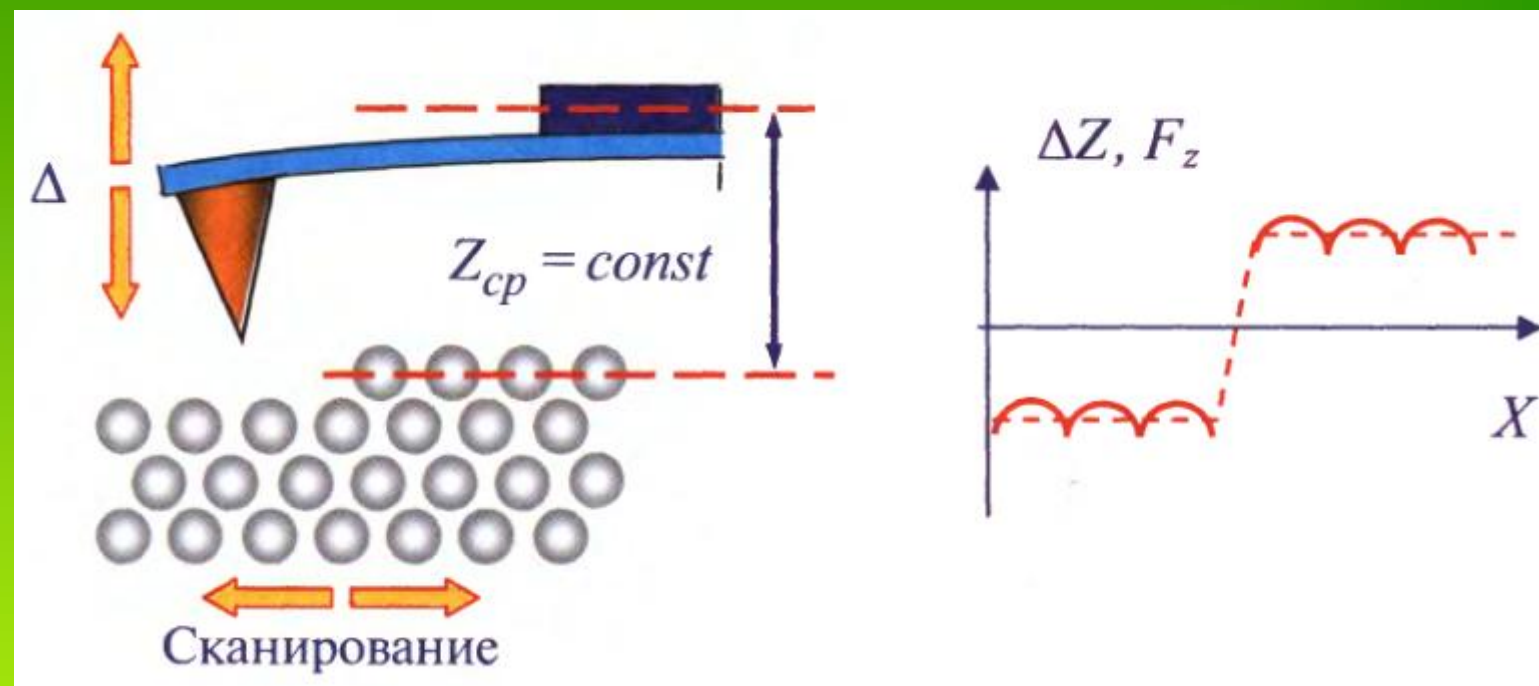


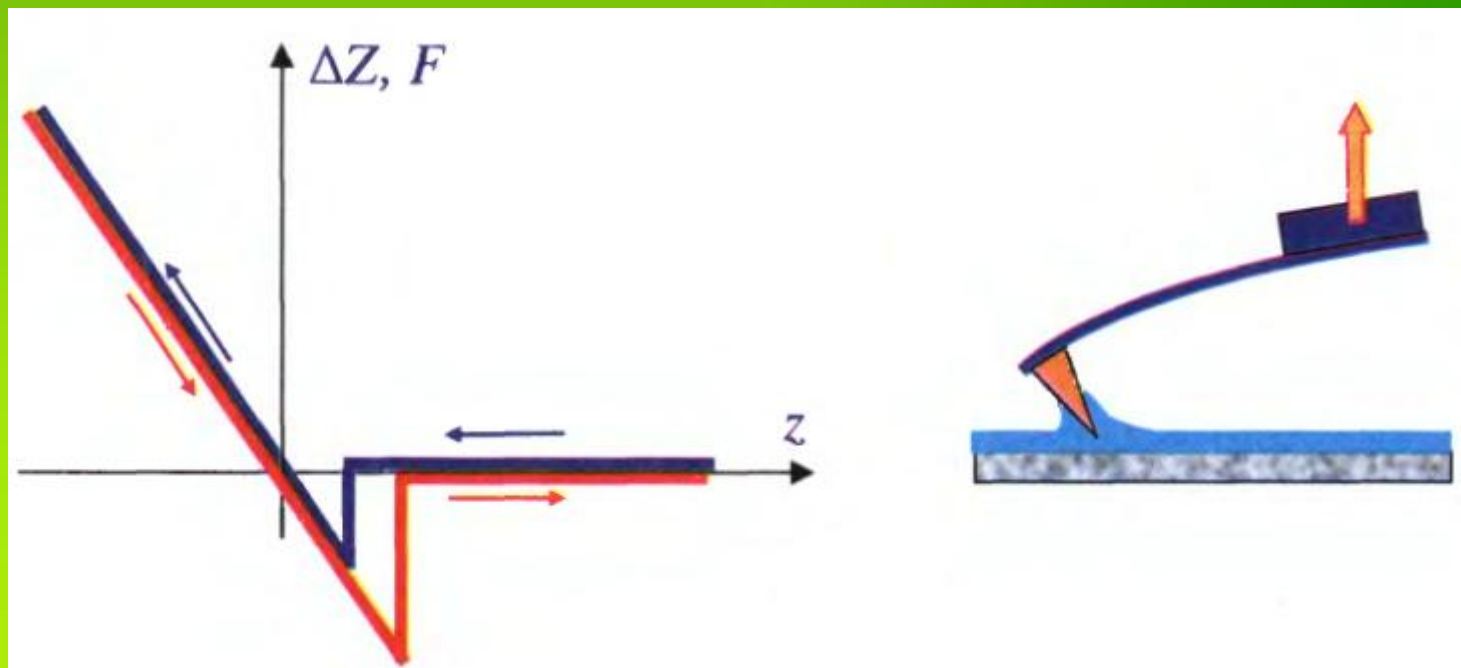
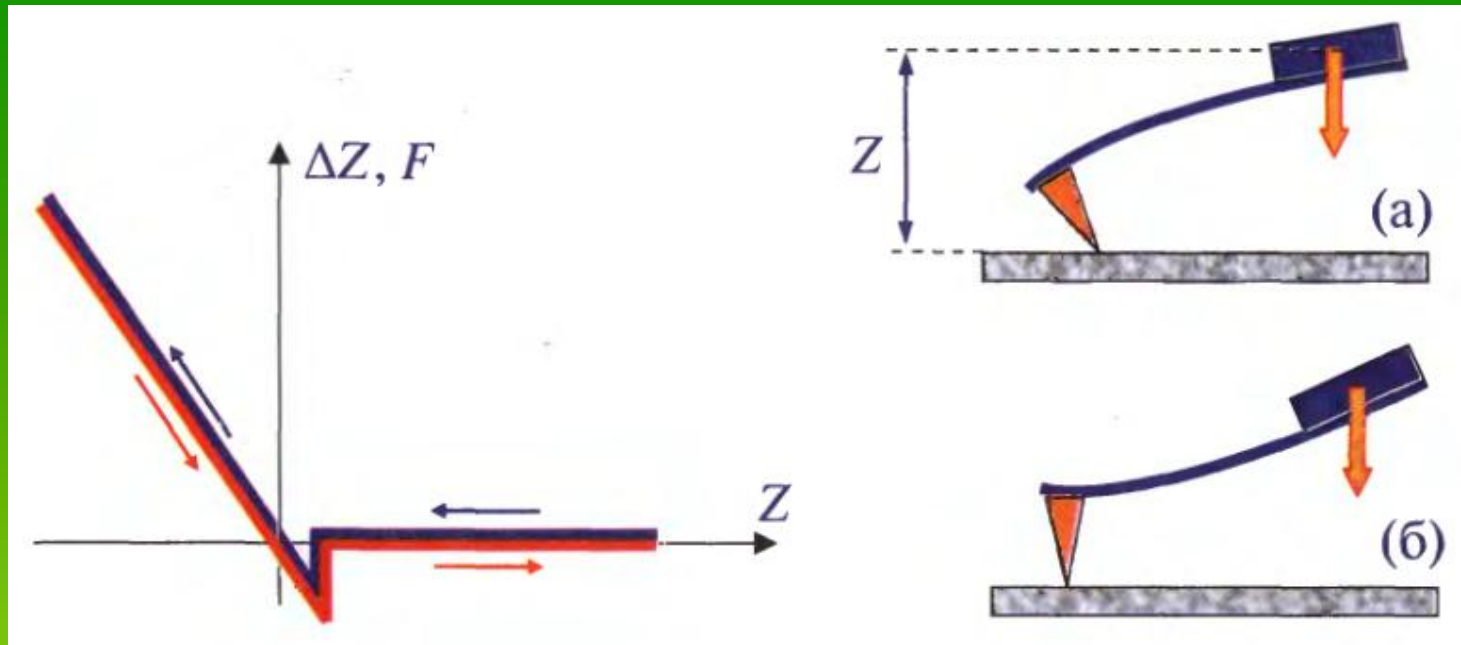
(b)

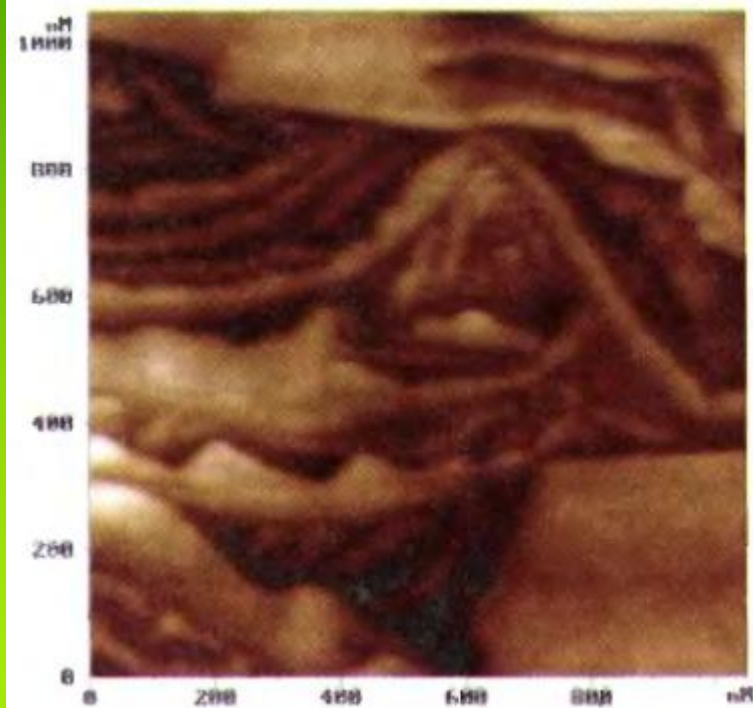




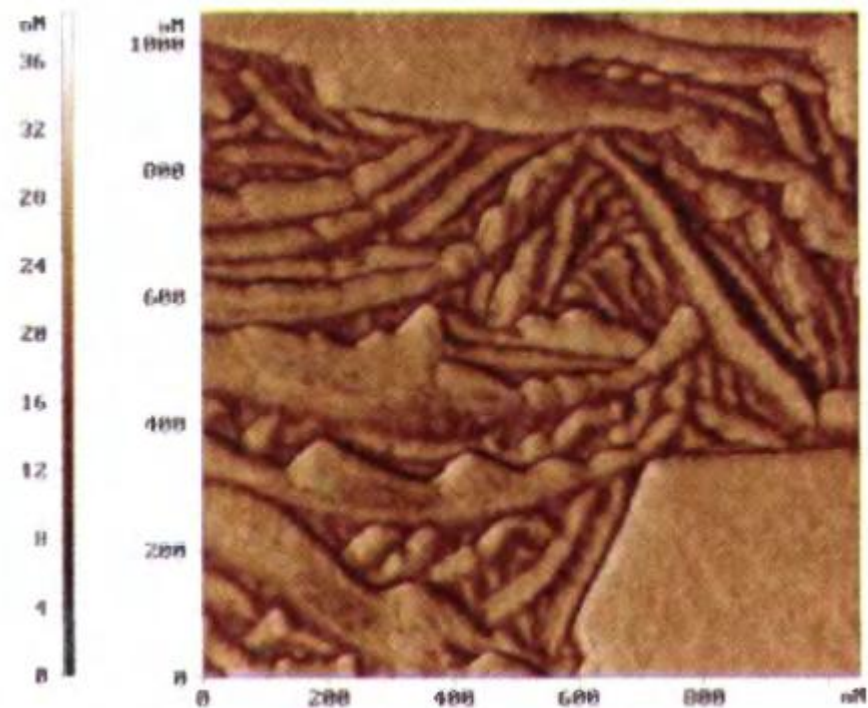








(a)



(b)

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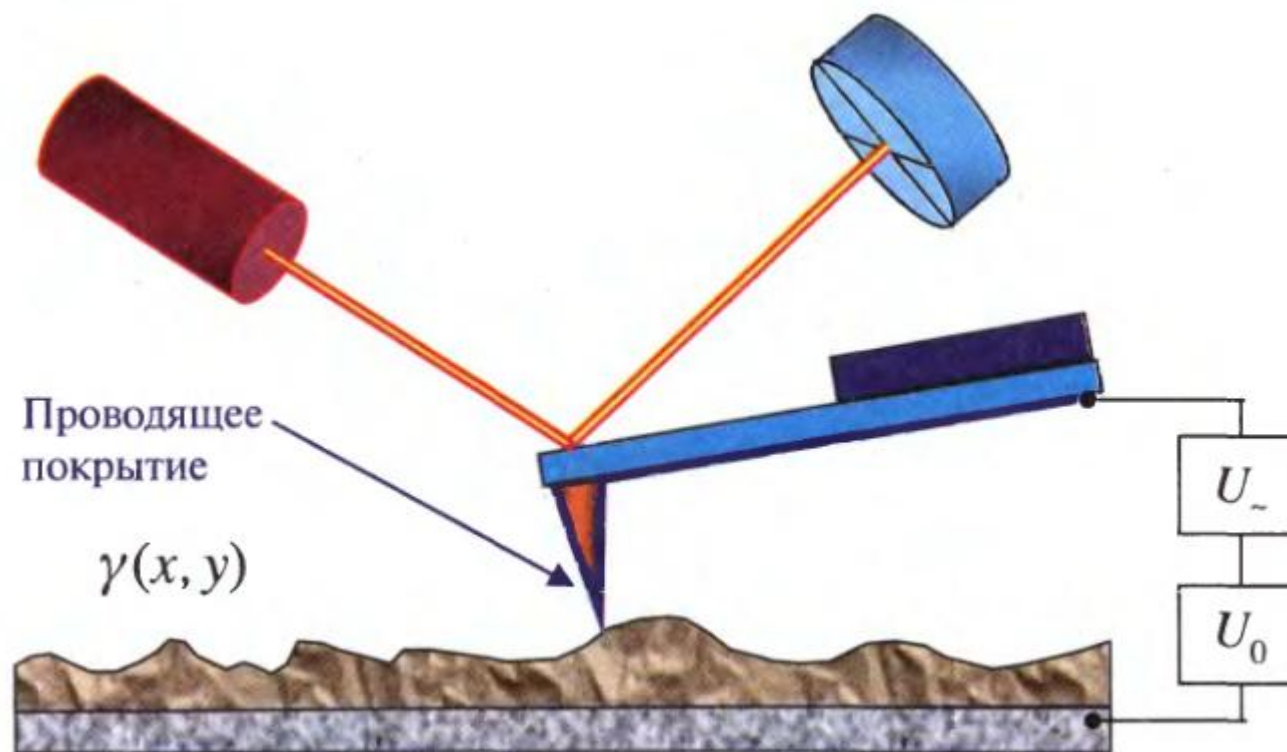
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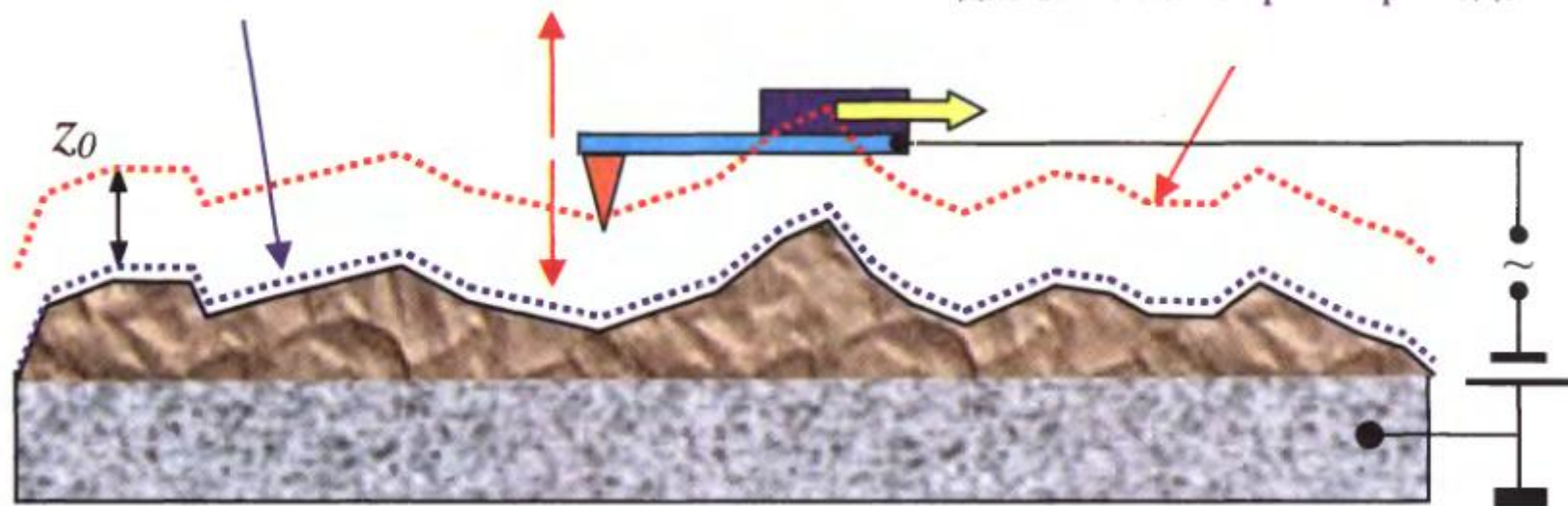
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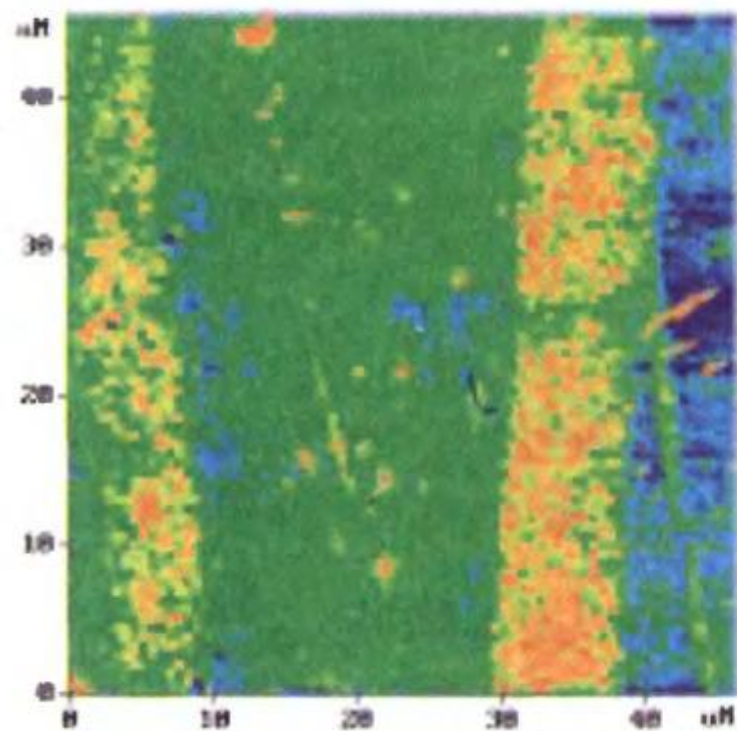


Траектория зонда
на первом проходе

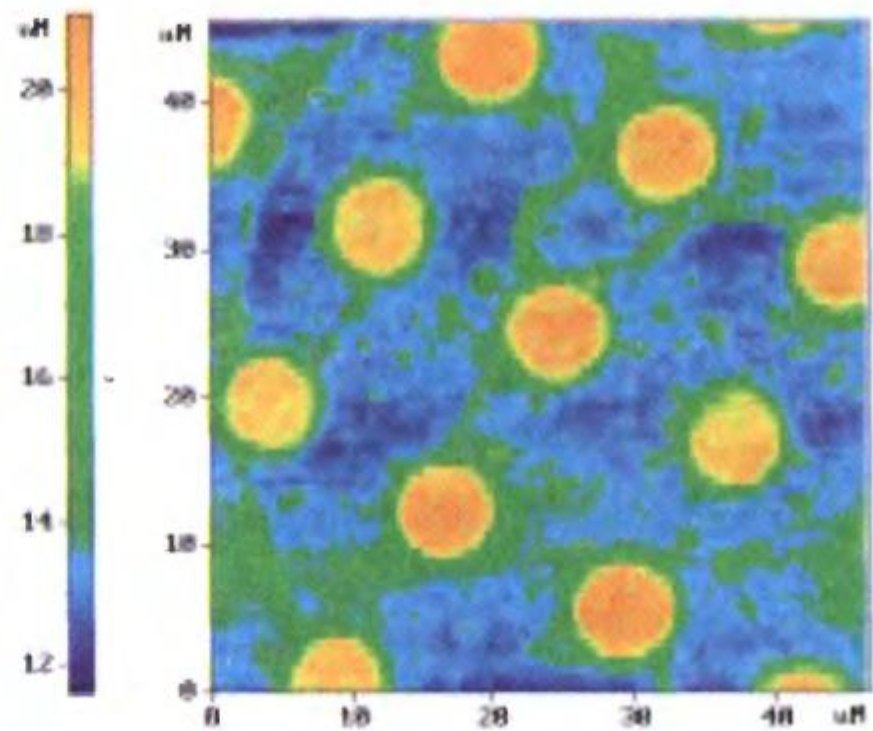
Траектория зондового
датчика на втором проходе



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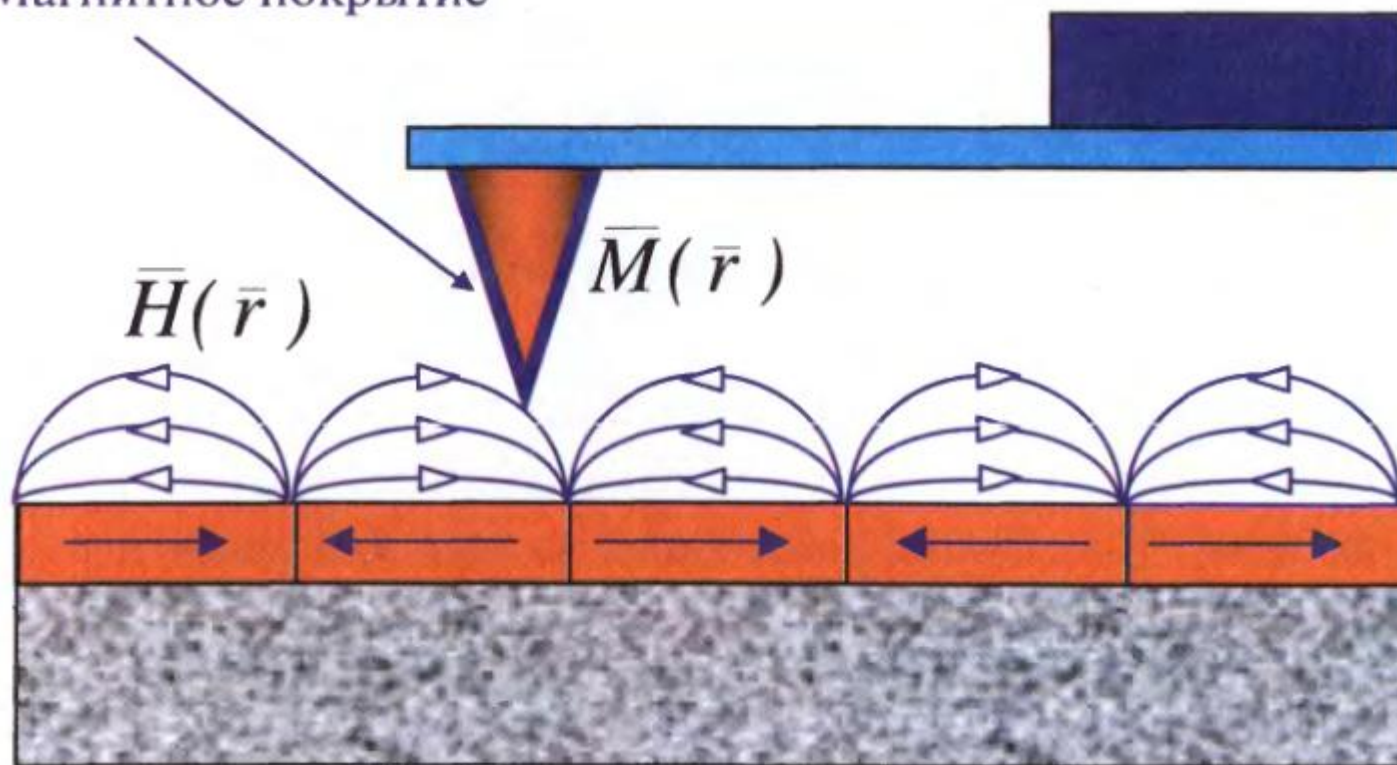


(a)



(b)

Магнитное покрытие



$$= \frac{1}{2} \left(\frac{\epsilon_0 E_{\text{elec}}^2}{\rho} - \cos \theta \right)$$


F14H20

