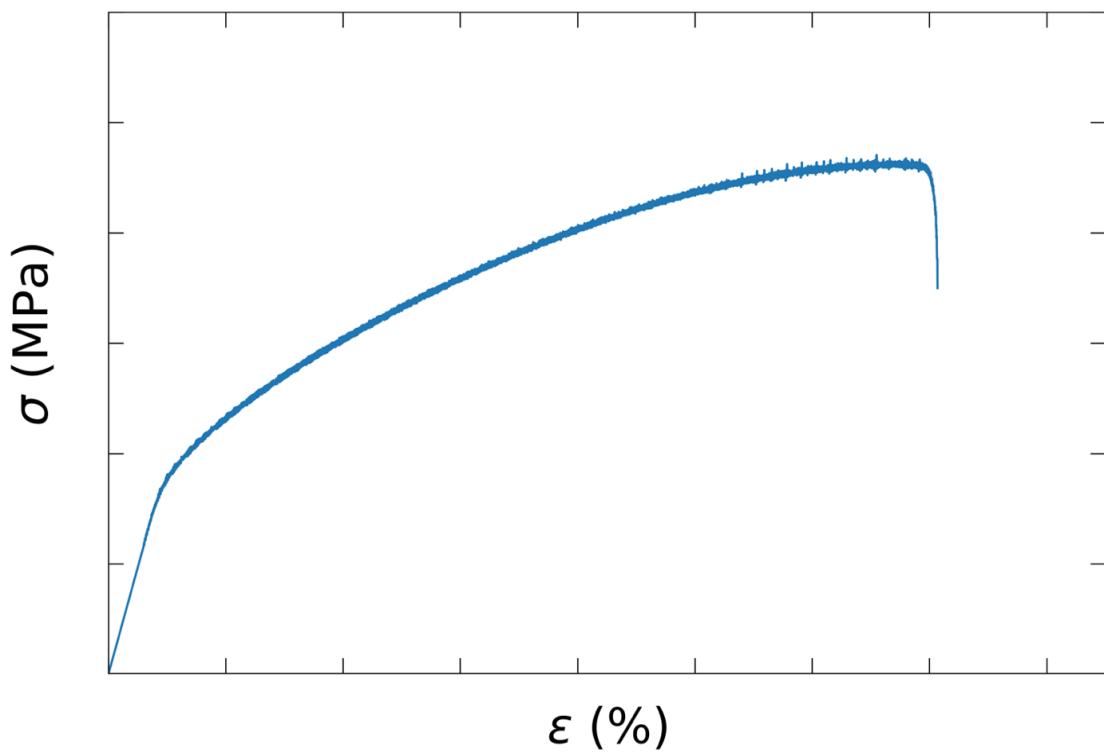


## 7.2 塑性形变与位错 (多晶, 合金)

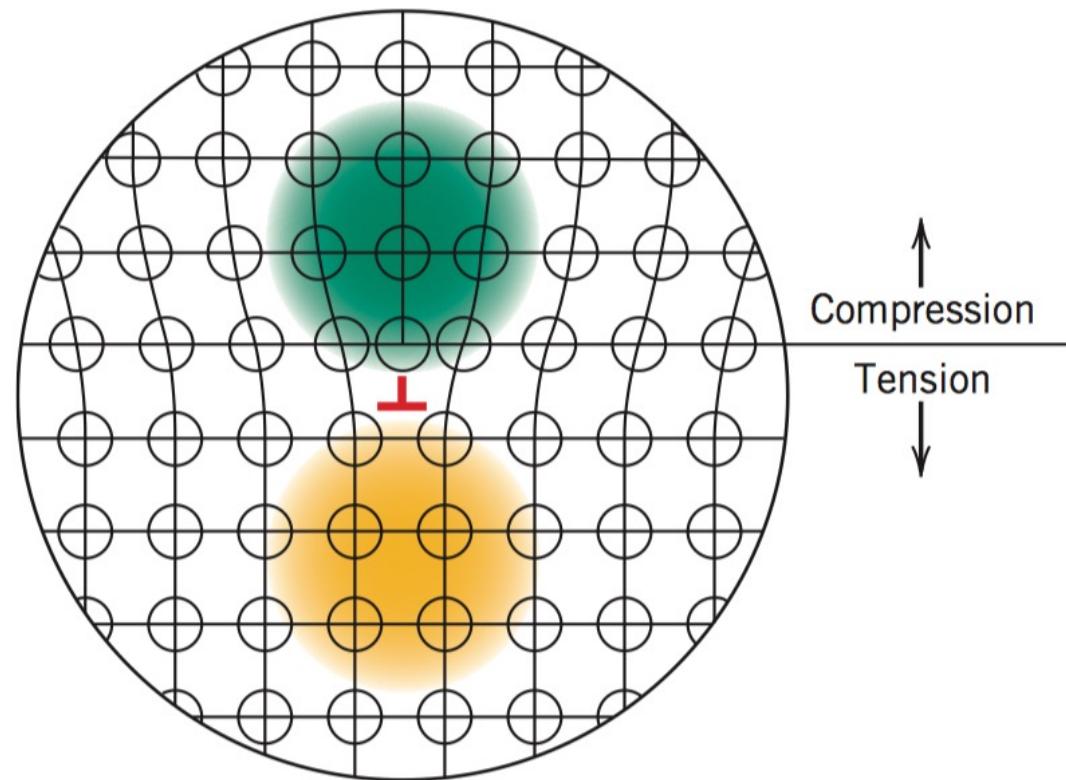
Dongsheng Wen

固溶强化  
加工硬化  
晶粒细化强化

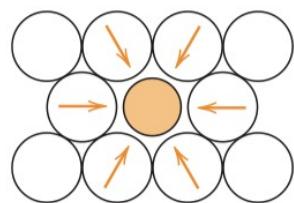
我们可以通过什么来改变/强化应力应变曲线？？？



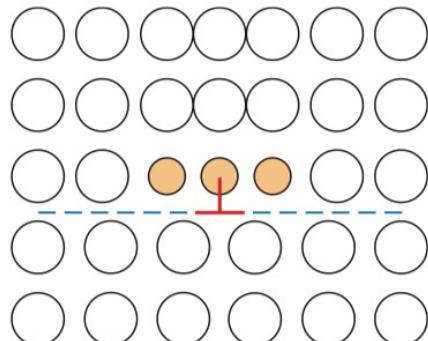
# 刃位错产生的畸变和应力



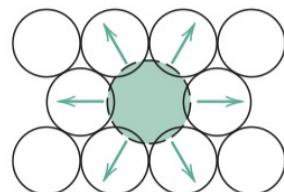
# 位错和溶质原子



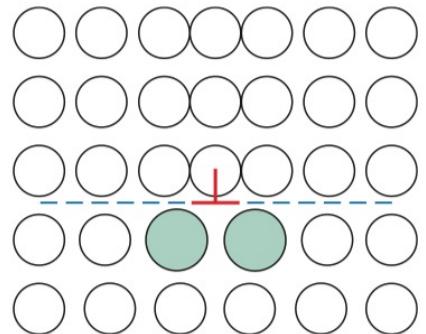
(a)



(b)



(a)



(b)

# 位错和溶质原子

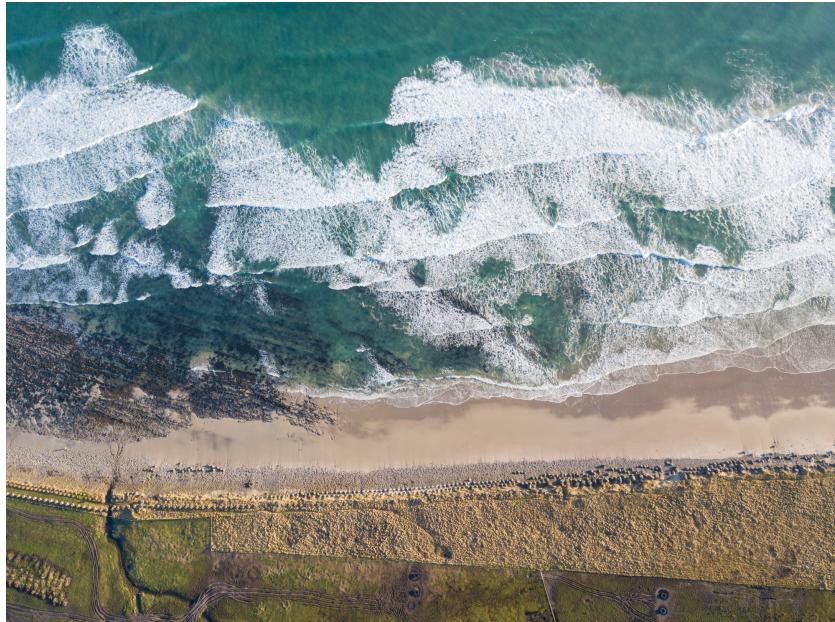
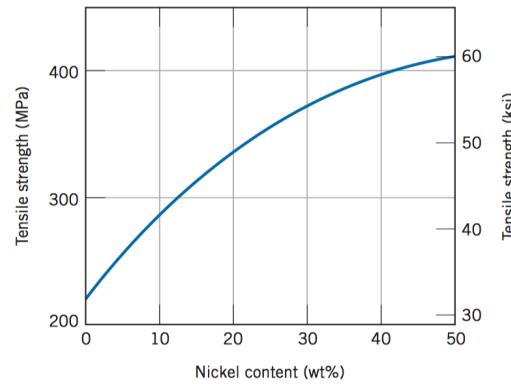
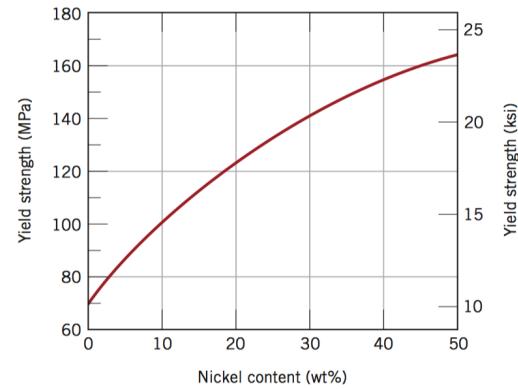


Photo by [K B](#) on [Unsplash](#)

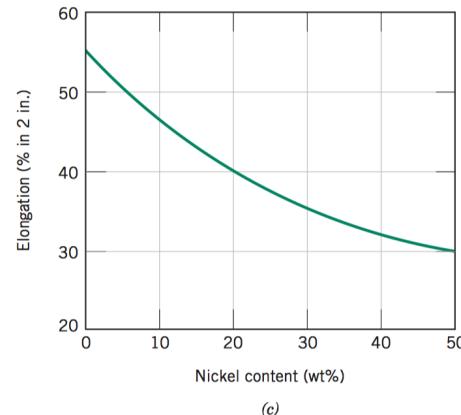
# 位错和溶质原子：固溶强化



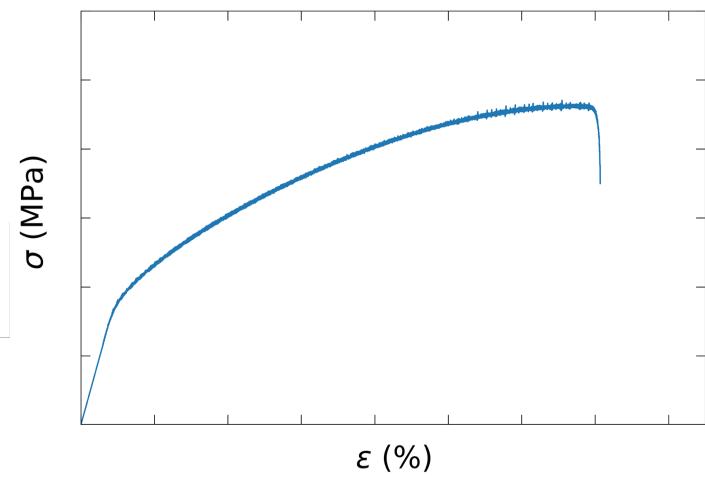
(a)



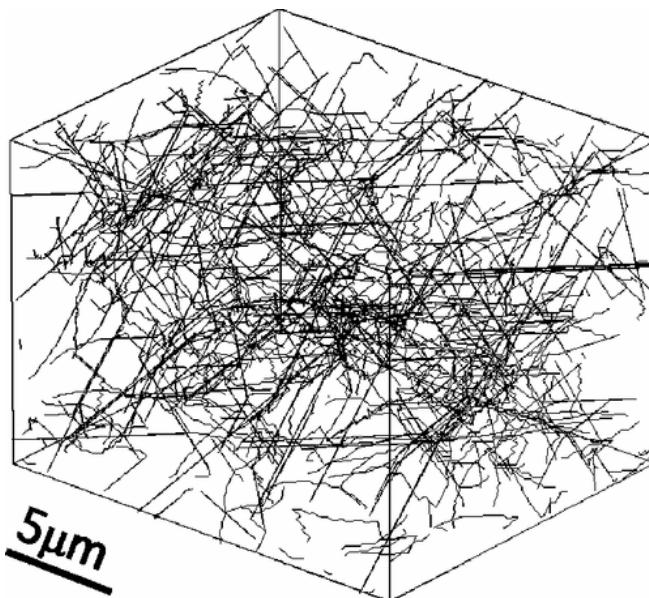
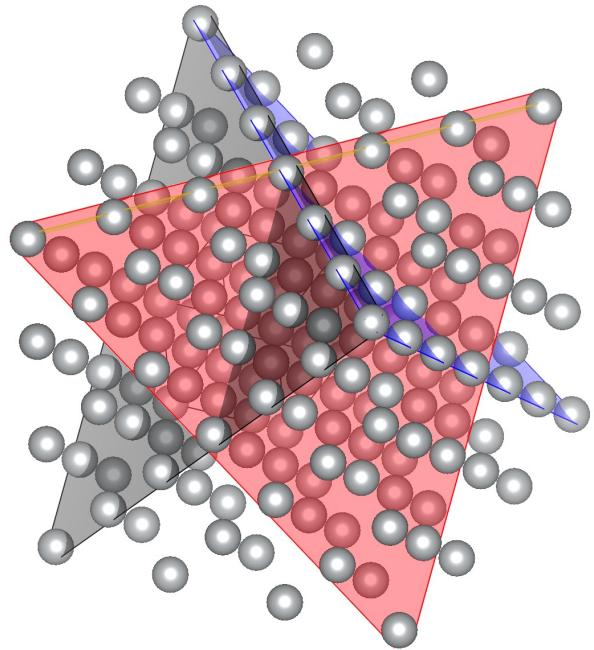
(b)



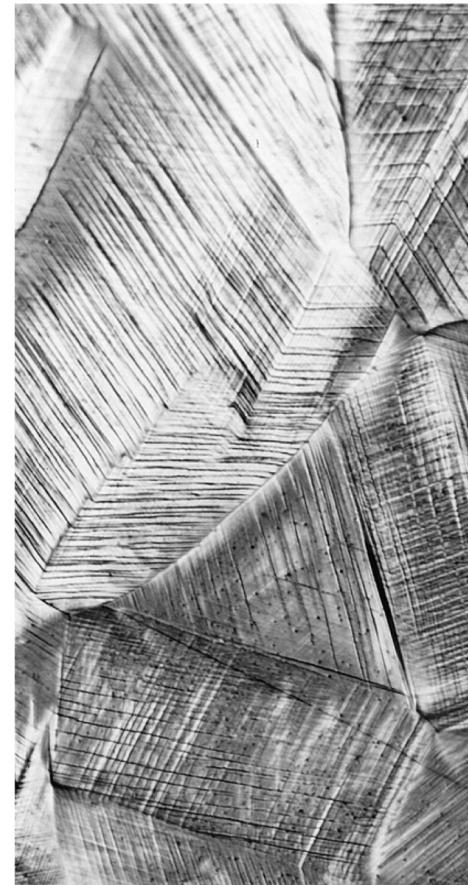
(c)



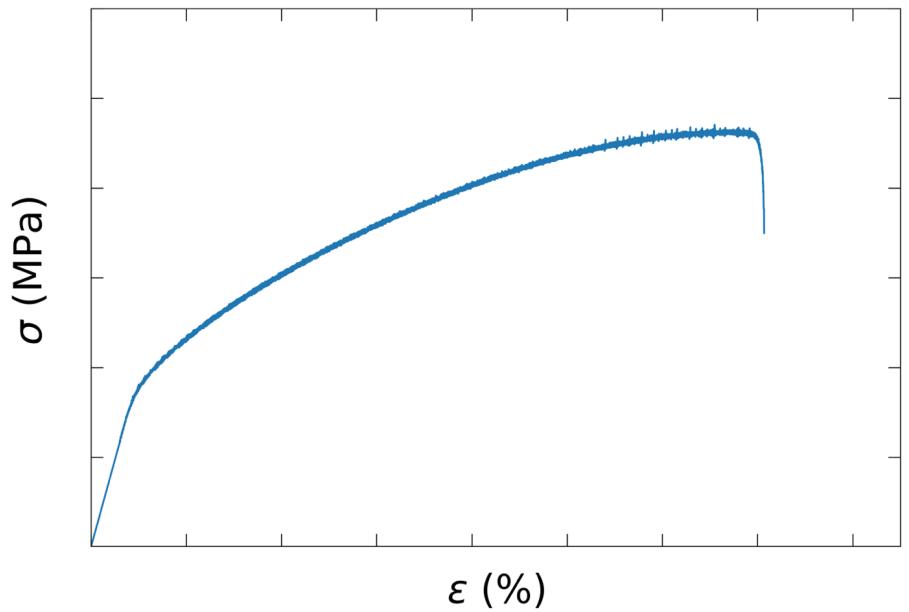
# 位错和位错



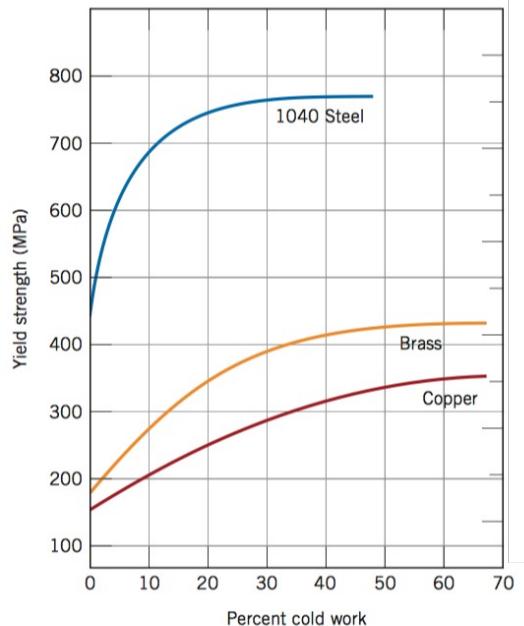
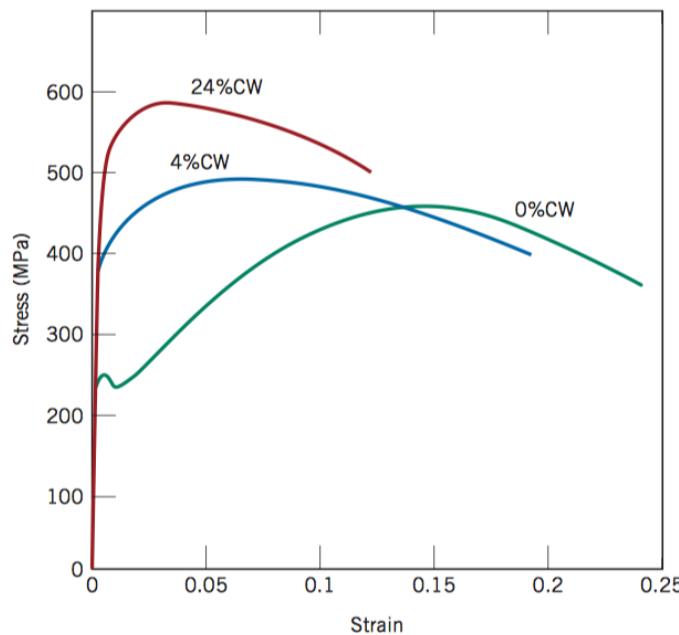
Madec, R., Devincre, B. and Kubin, L.P., 2002. From dislocation junctions to forest hardening. *Physical review letters*, 89(25), p.255508.



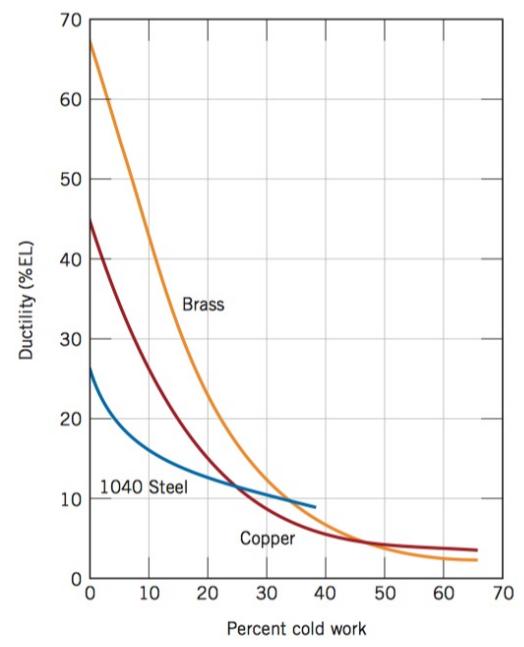
# 位错和位错：加工硬化



# 位错和位错: 加工硬化

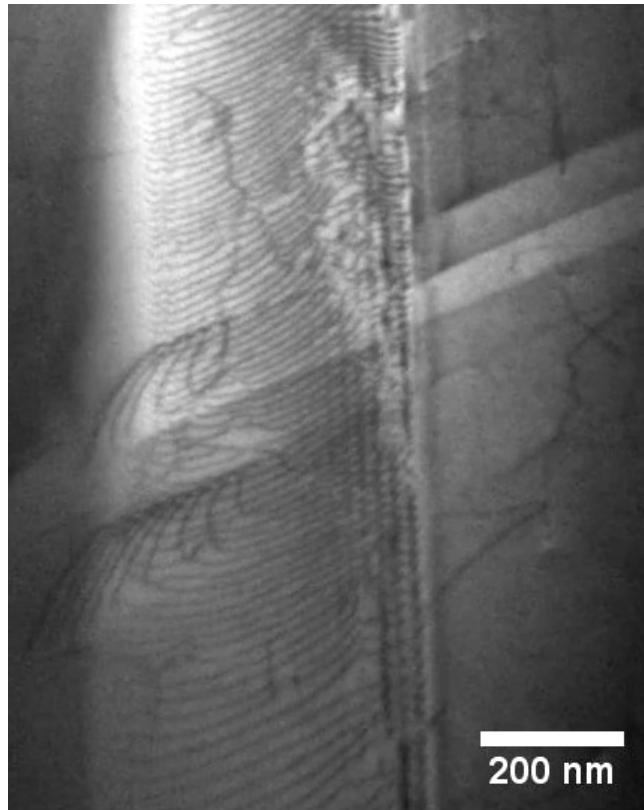
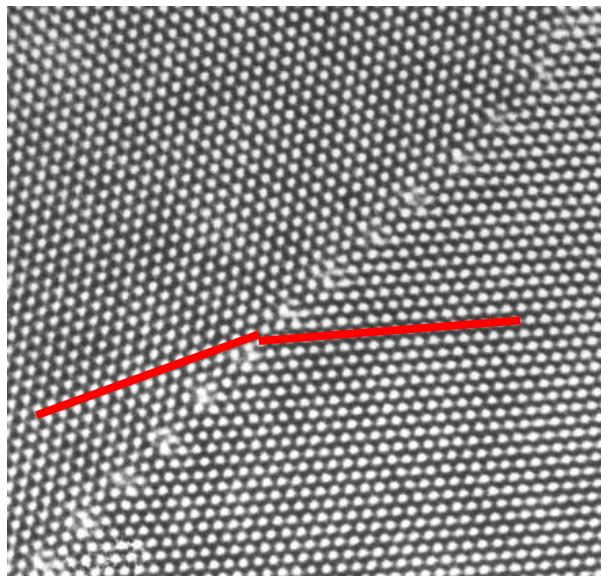
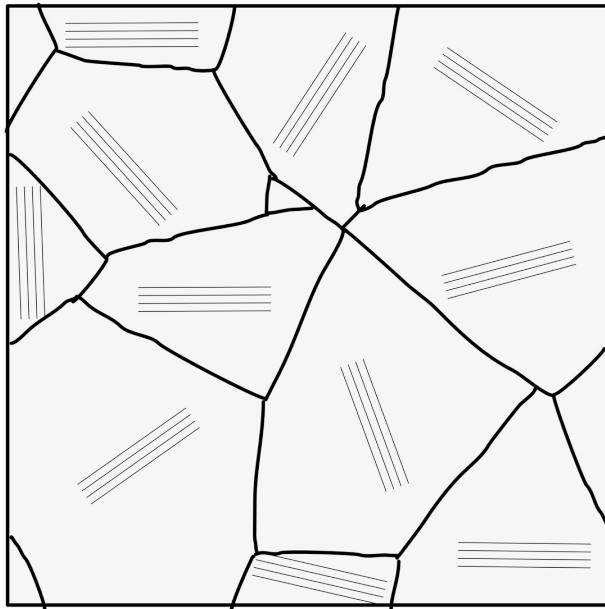


(a)

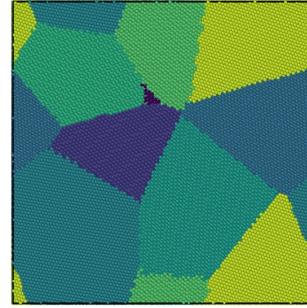
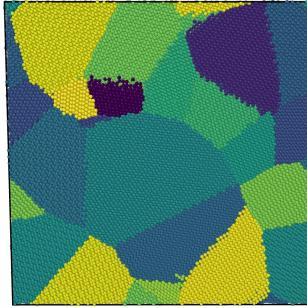
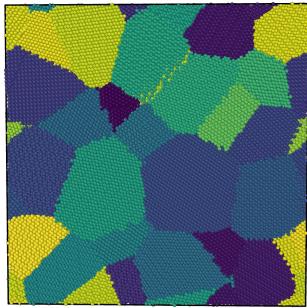
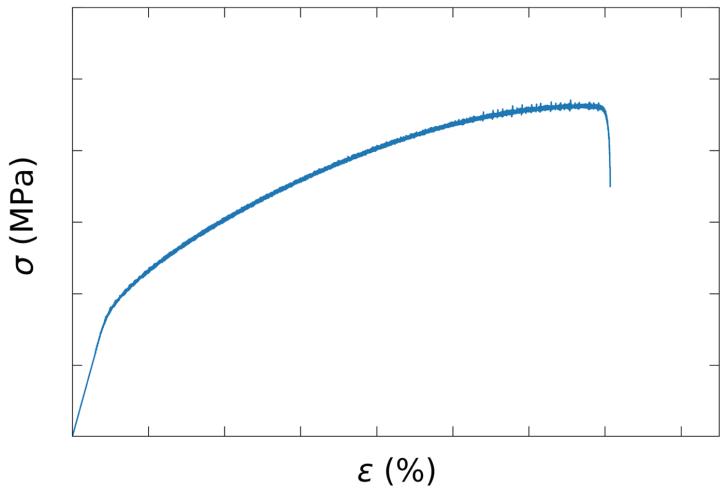


(c)

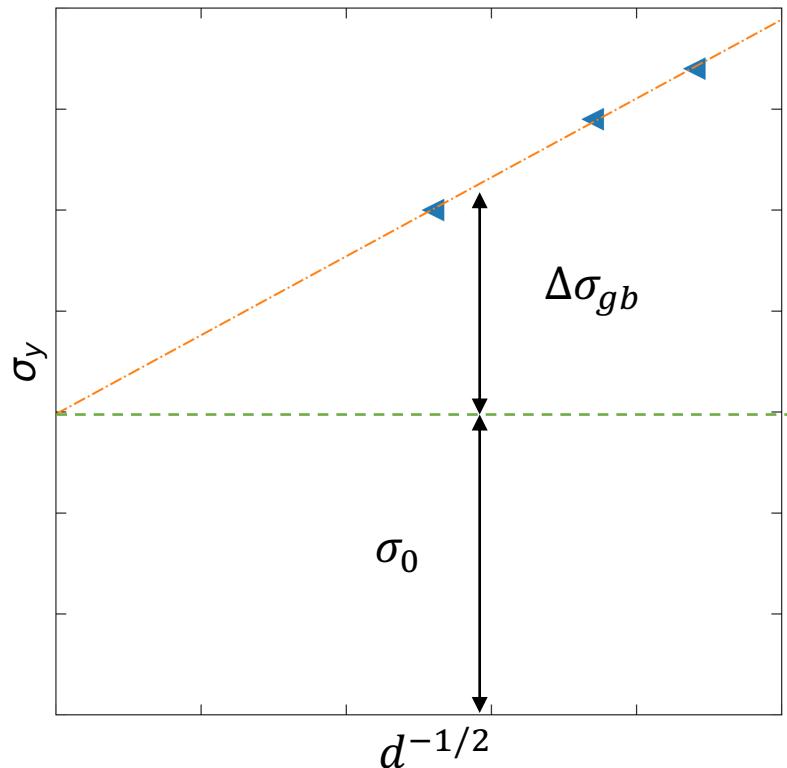
# 位错和晶界



# 位错和晶界: 晶界强化

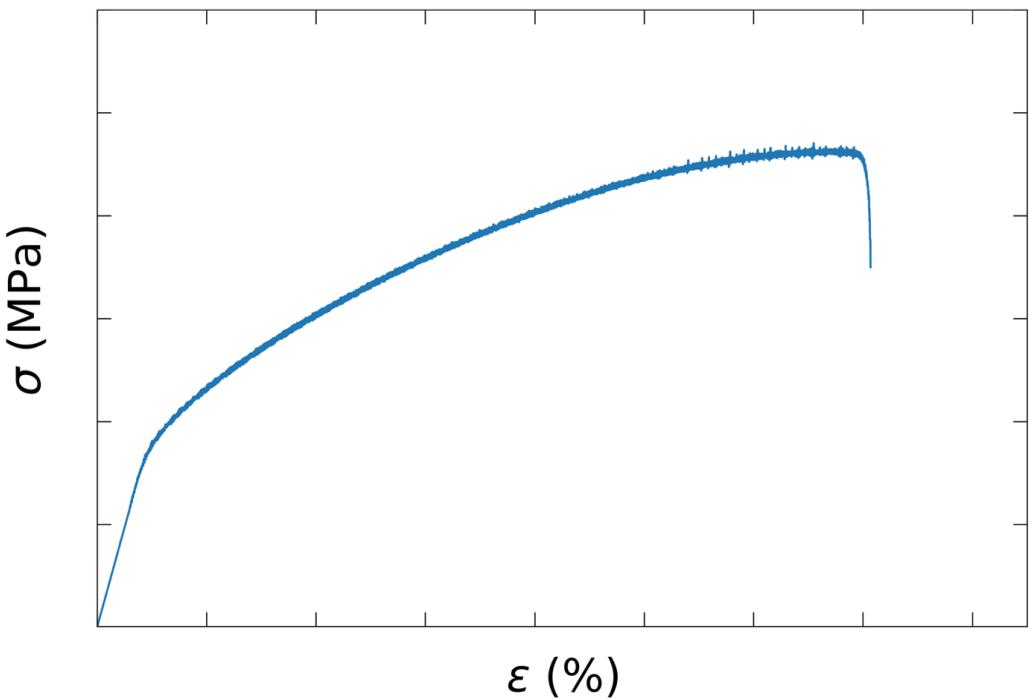


# 位错和晶界: 晶界强化



$$\sigma_y = \sigma_0 + Kd^{-1/2}$$

我们可以通过什么来改变/强化应力应变曲线？？？



# 7.3 回复与再结晶

dswen94