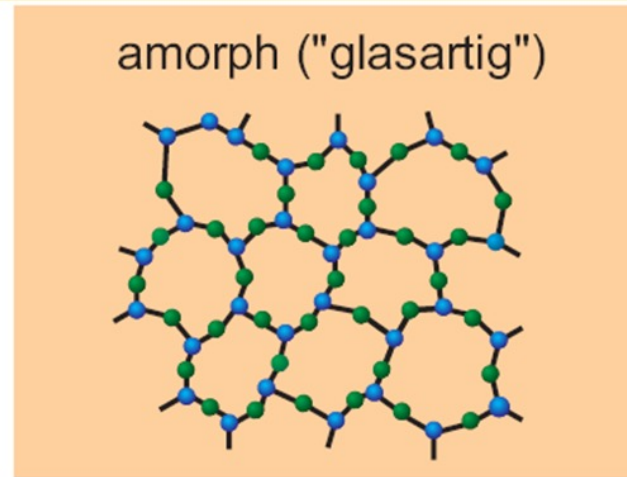
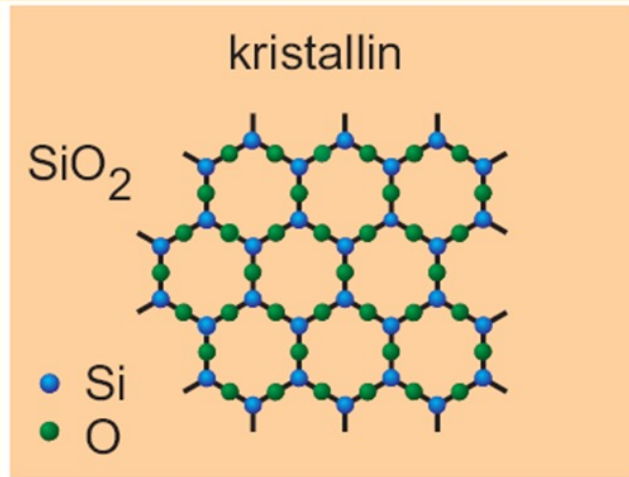
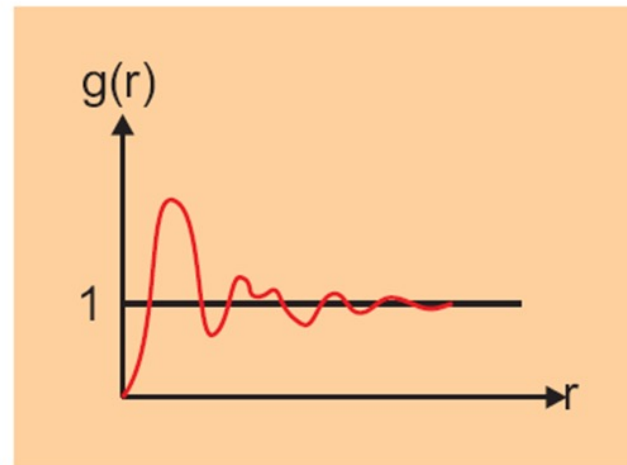
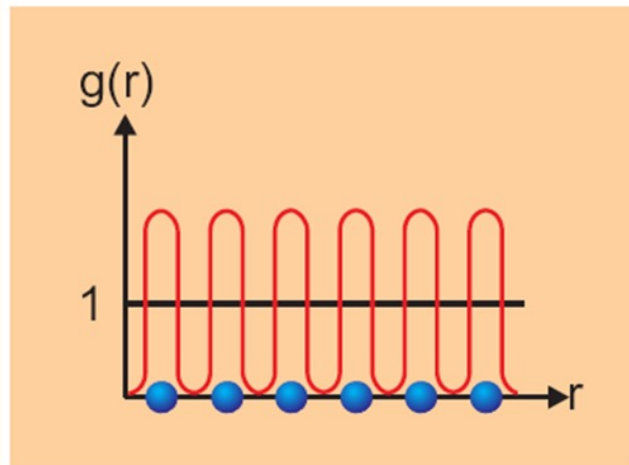
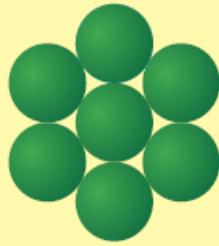




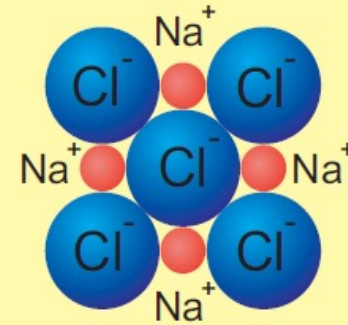
Paarverteilungsfunktion



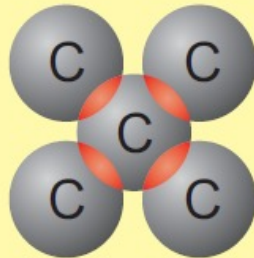
© H.v.Löhneysen



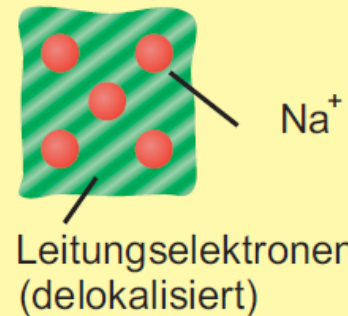
van der Waals-
Bindung
Edelgas-Kristalle



Ionenbindung
NaCl-Kristall



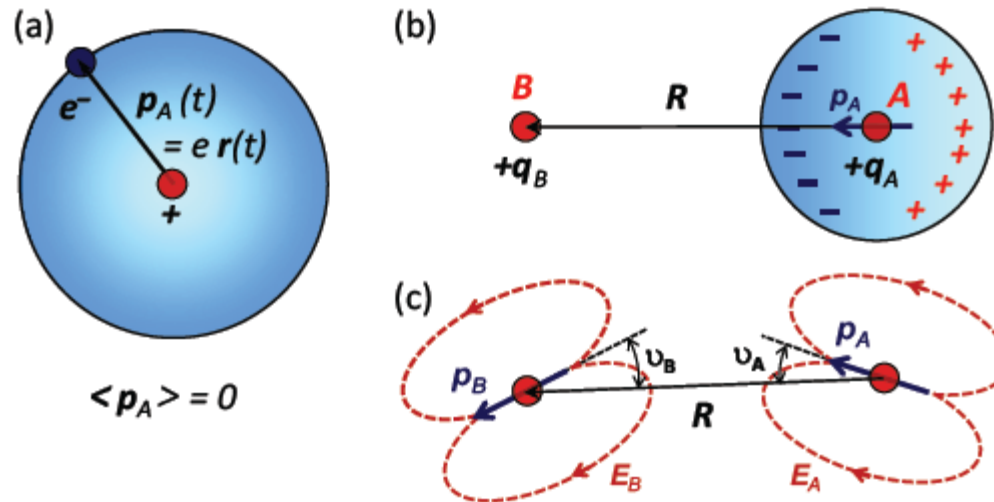
kovalente Bindung
Diamant



metallische Bindung
Natrium

Van-der-Waals-Kräfte => Fluktuationsbindung

Wechselwirkung zwischen fluktuierenden Dipolen



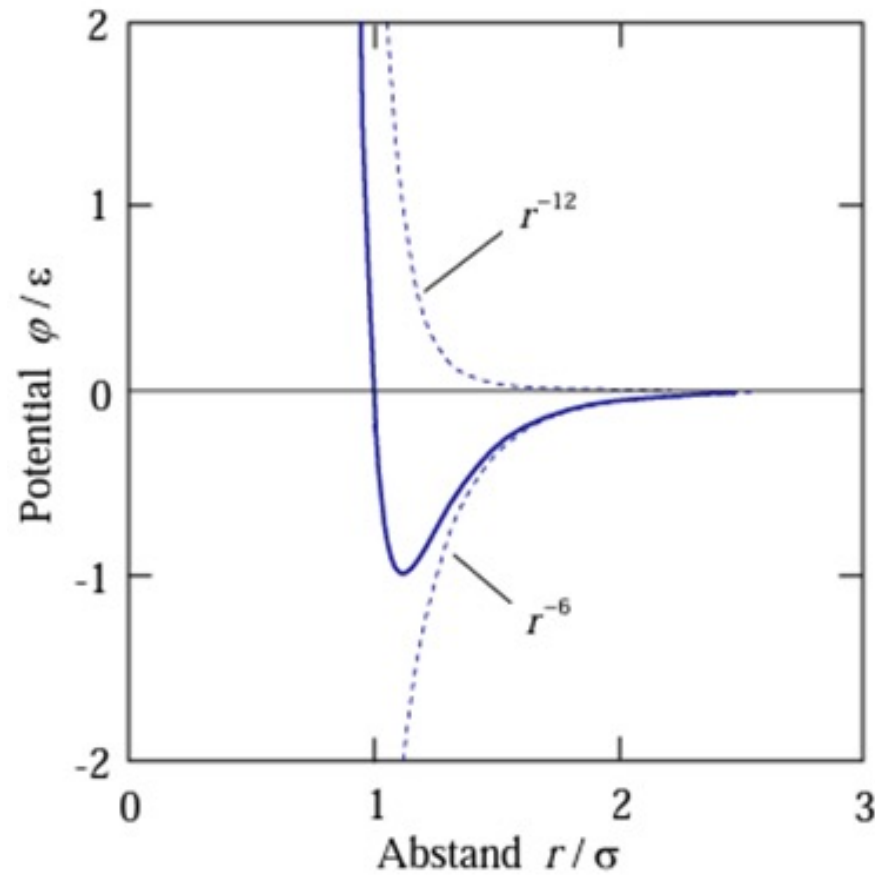
(a) Momentanes elektrisches Dipolmoment der kugelsymmetrischen Ladungsverteilung eines Atoms A.

(b) Induziertes Dipolmoment durch Polarisierung der Elektronenhülle von Atom A mit einer Punktladung B.

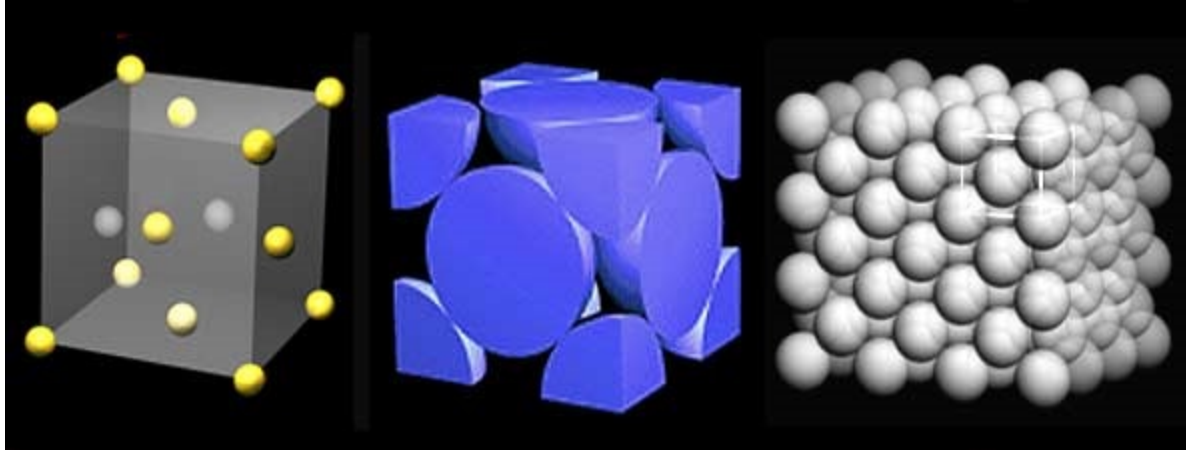
(c) Gegenseitig induzierte Dipolmomente stehen parallel zum Verbindungsvektor R der beiden Atome.

© R. Gross, A. Marx

Lennard-Jones-Potential

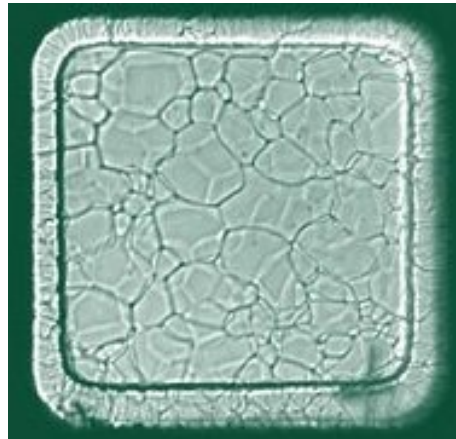


Edelgaskristalle: Van-der-Waals-Kräfte



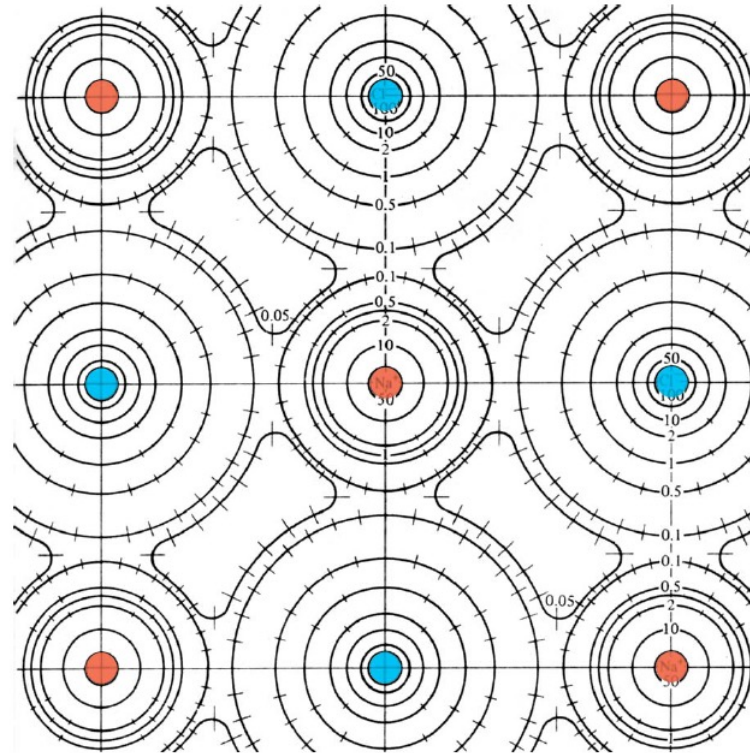
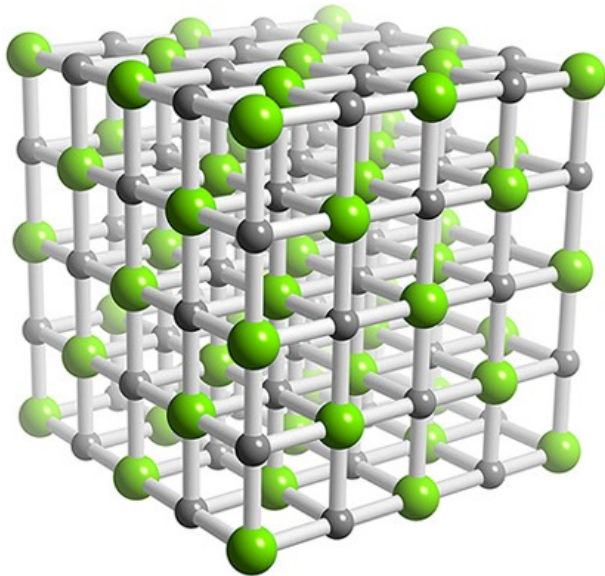
fcc lattice
fcc = face centered cubic

kfz Gitter
kfz = kubisch
flächenzentrierte Struktur



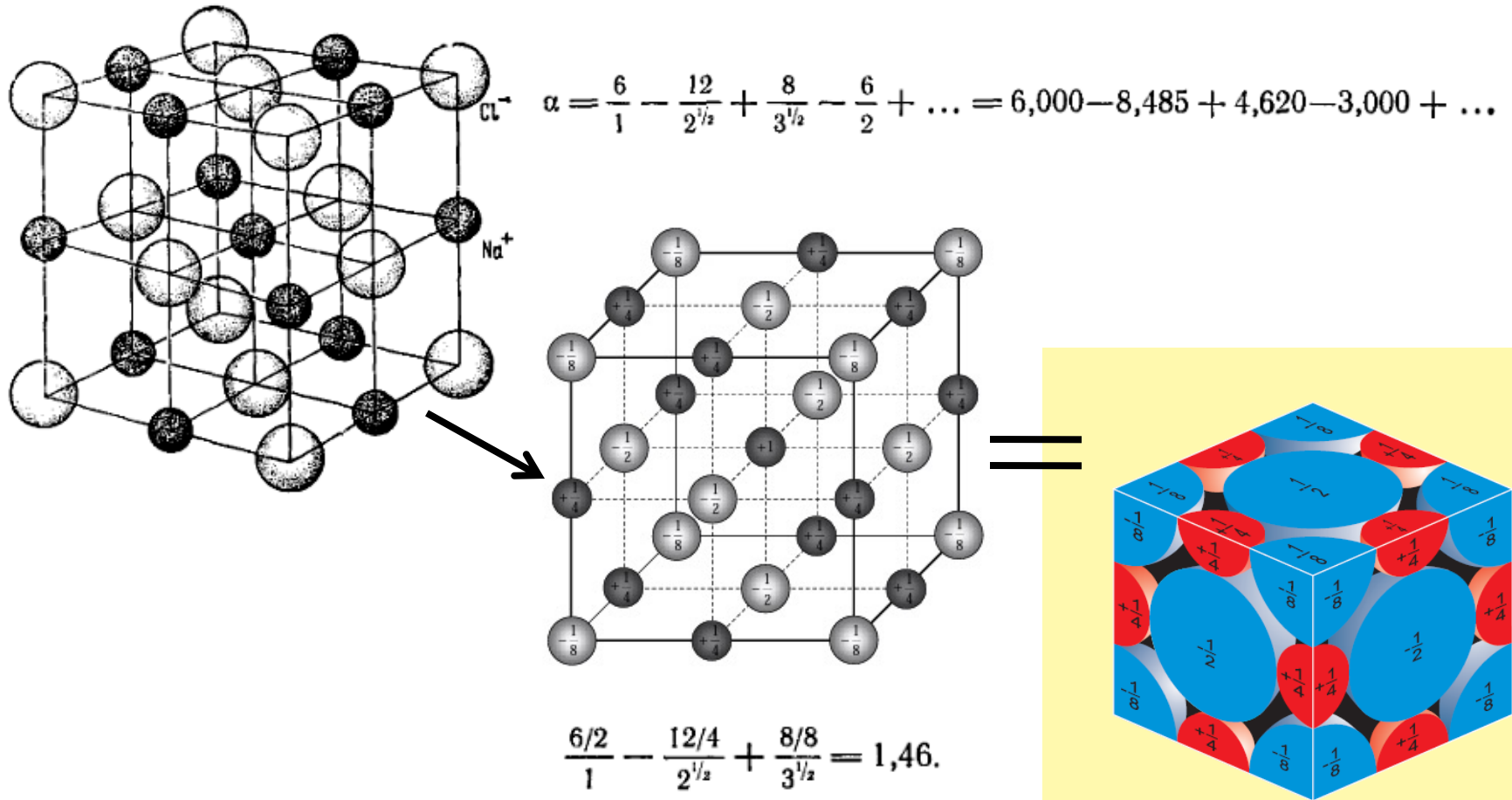
Festes He bei Temperaturen
unter -272.2°C und Drücken
über 40 bar

Ladungsverteilung im NaCl-Kristall



Die Zahlenangaben geben die Elektronendichte pro $\text{\AA}^3$.

zur Berechnung der Madelung-Konstante: Evjen-Zelle für NaCl



© S. Hunklinger