

Bachelorarbeit-Themen



AK Hillebrecht

Bachelorarbeit-Themen

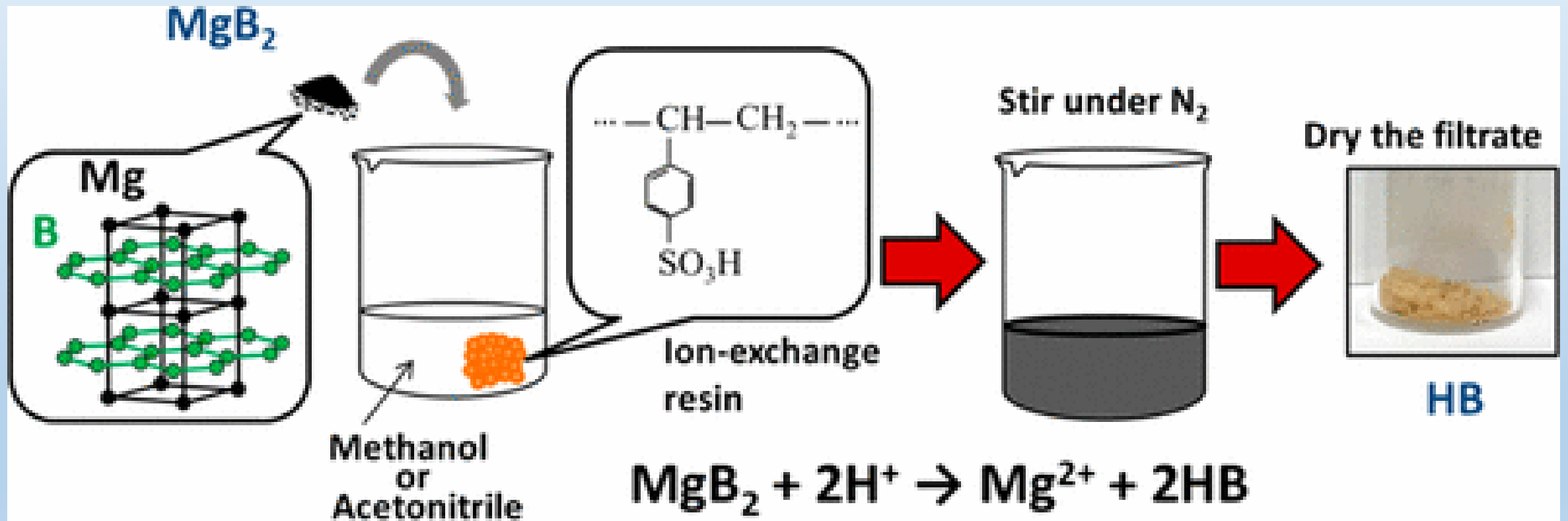


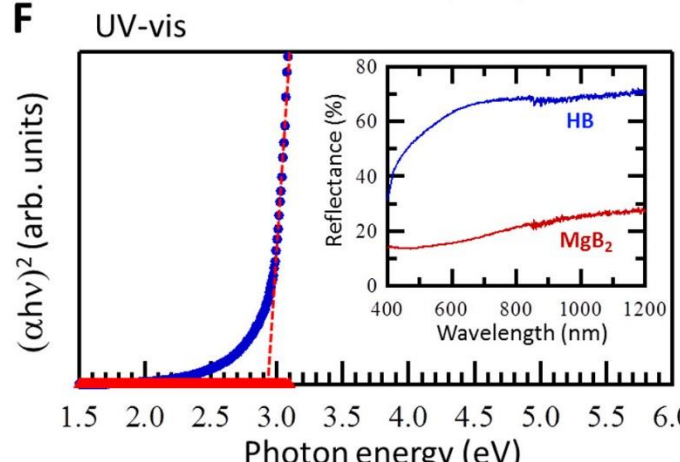
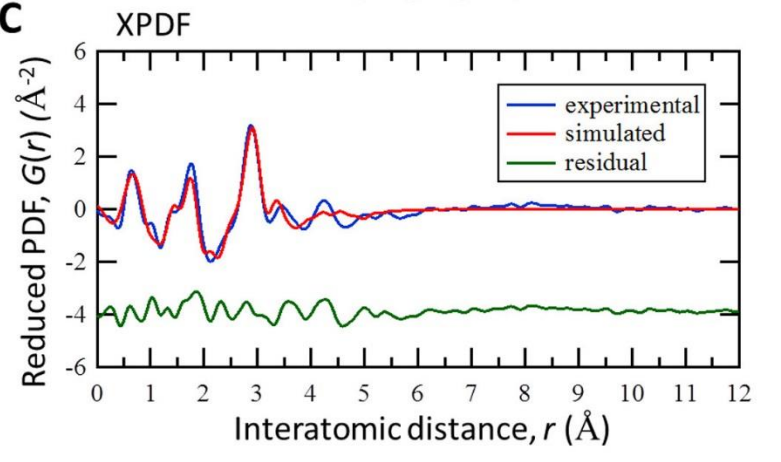
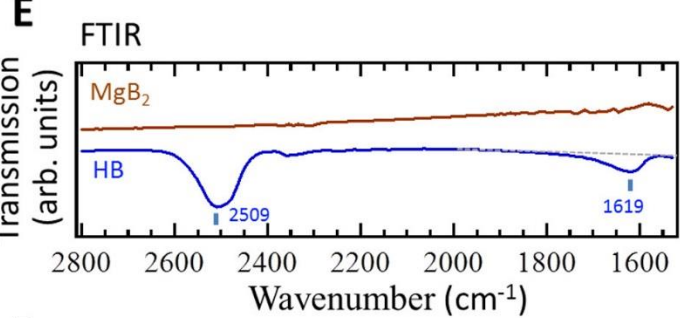
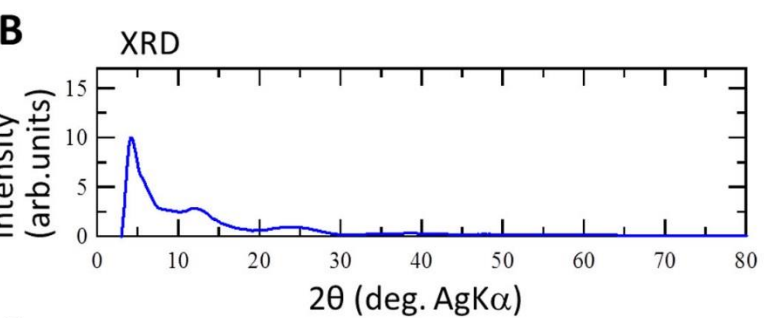
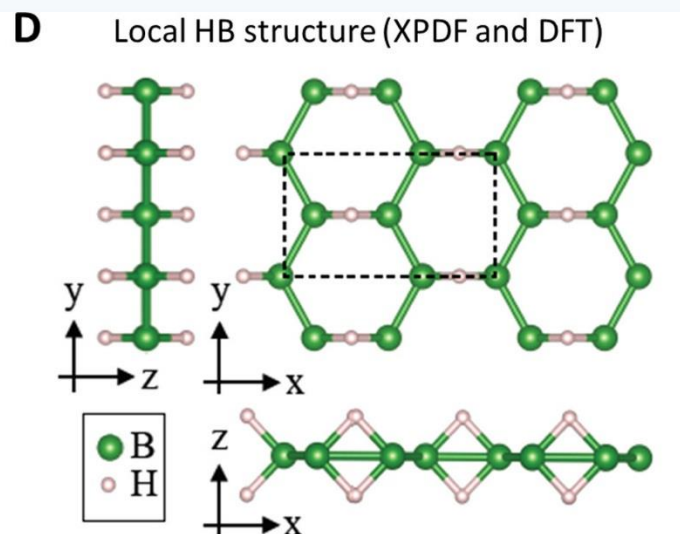
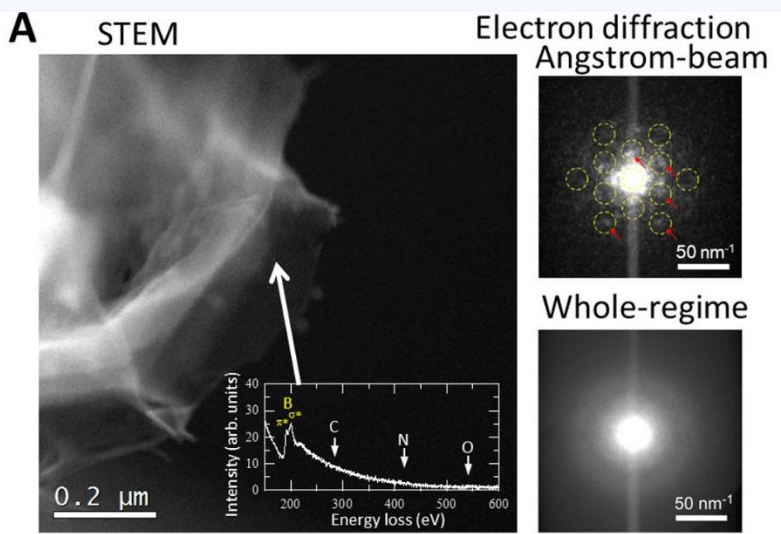
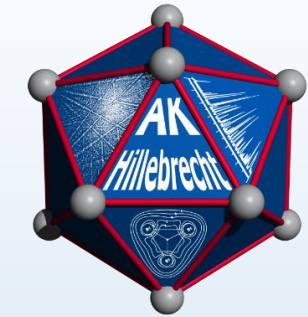
Borreiche Boride des Lithiums

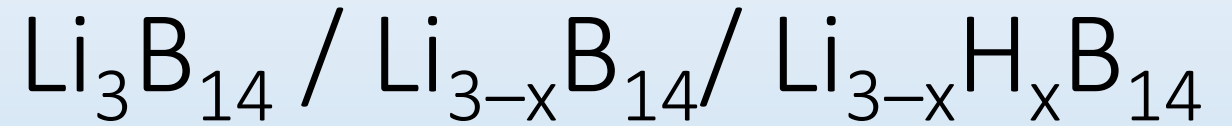
JACS 2017, 139, 13761



Kationenaustausch in MgB_2 und Bildung von „HB“







I-42d

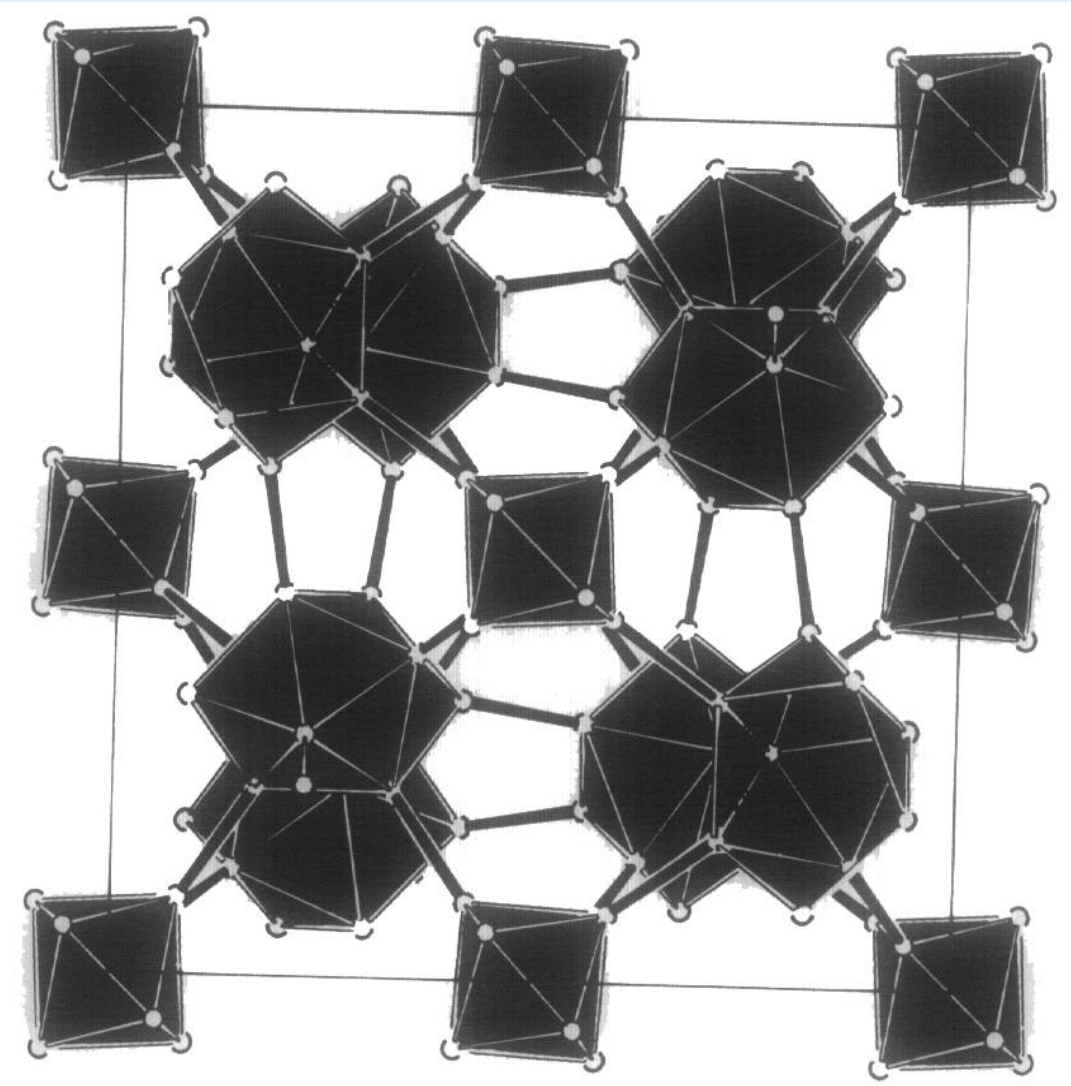
$a = 10.76 \text{ \AA}$, $c = 8.94 \text{ \AA}$

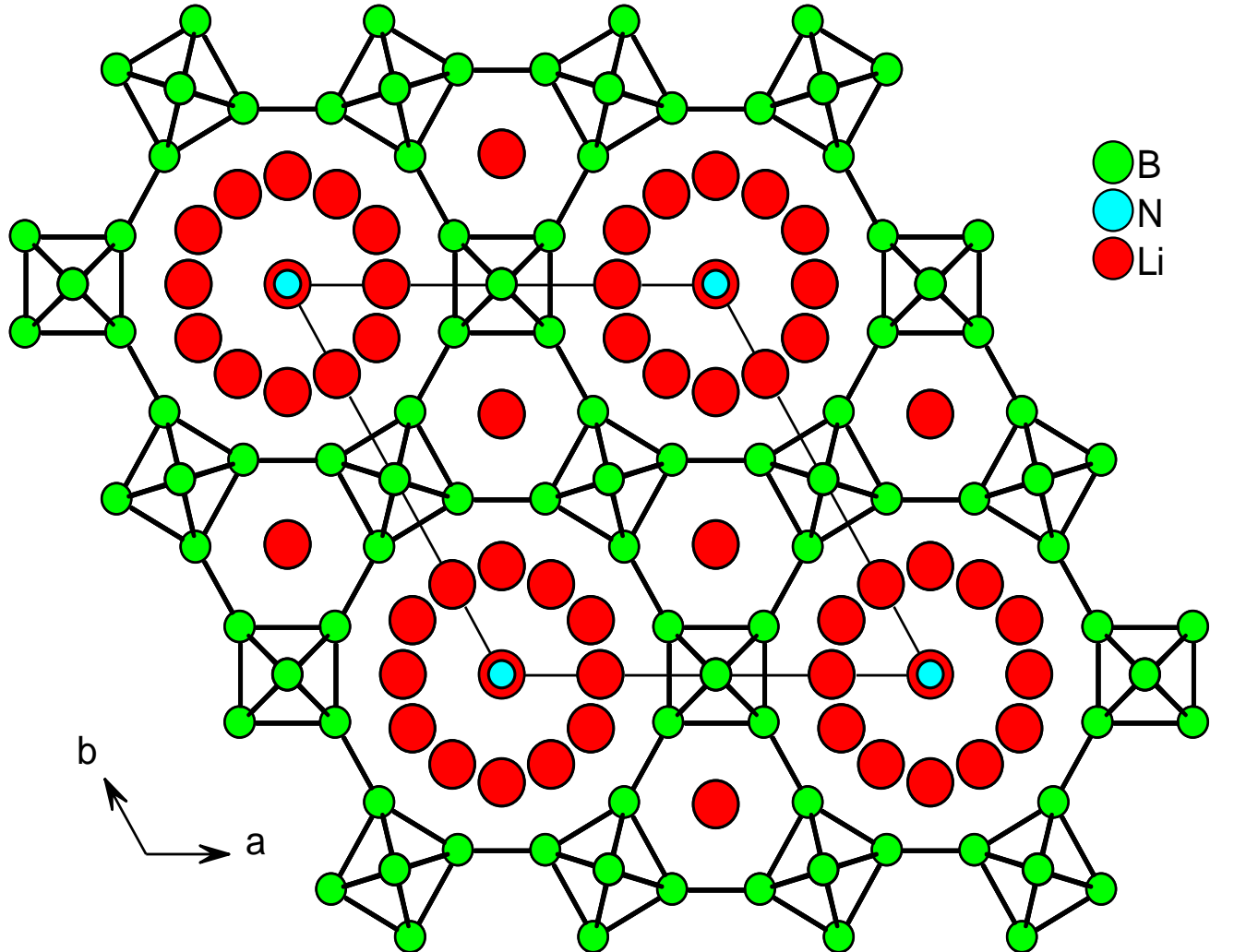
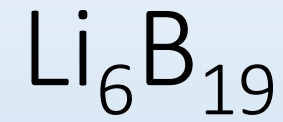
B_8 und B_{10} -Einheiten als closo-Cluster

$\Delta E = 1.6 \text{ eV}$ (Halbleiter)

Substitution $\text{Li}^+/\text{H}^+/\text{H}_3\text{O}^+$

Ionenleiter??





Kagomé-Netz aus B_6 -Oktaedern
Dreiecke (hex. Prismen) mit Li1
besetzt

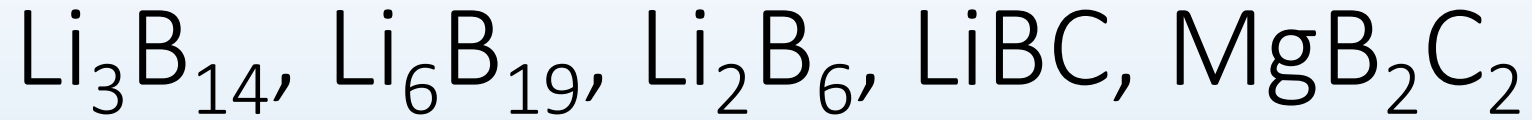
Hexagonale Röhren durch
deckungsgleiche Stapelung

Sechsecke mit Li (fehlgeordnet)
und ??? B, C, N, O

LiBC / MgB_2C_2



Jeweils „Heterographit“-Strukturen mit planaren B/C-Schichten



- Synthesen aus Elementen in BN-Tiegeln und Ta-Ampullen
- Charakterisierung durch
 - XRD (Pulver, Einkristall)
 - REM/TEM
 - IR / Raman
 - NMR
- Neue Borane??
- Li/B als Alternative zu Li/C ?? Li-Ionenakku