



# PHYSIKALISCHES KOLLOQUIUM



Mittwoch, 10.04.2013, um 17:15 Uhr

Ort: Reichenhainer Str. 90; Neues Hörsaalgebäude, Raum: 2/N013

**Prof. Dr. Yuri Grin**

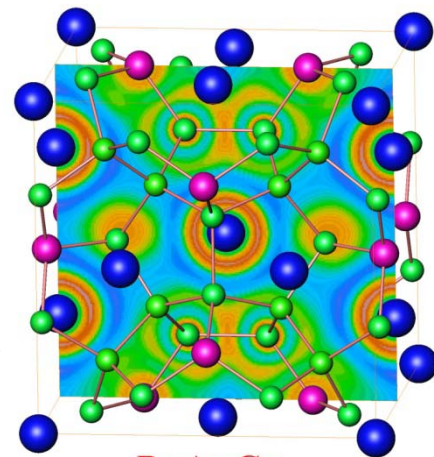
*MPI für chemische Physik fester Stoffe  
Dresden*

## **Chemistry and physics of intermetallic compounds**

*Intermetallics show chemical and physical behaviors interesting for applications. Therefore they serve as important components for materials design. An attempt to find a direct link between crystal structure, properties, as well the chemical bonding for these inorganic substances leads often to the conclusion, that there is a lack of reliable information on all three.*

*Especially, chemical bonding and its relation to crystal structure is a rather open question. The Electron-Localizability Approach opens access to the bond definition in real space, allows the revealing of relations between organo-metallic compounds and intermetallics, gives a possibility of a Zintl-like electron counting, and – in turn – opens connections to the electronic band structure.*

*Intermetallics attract the attention of material's developers during the past decades mainly due to their promising thermoelectrics. Our approach allows here differentiation of covalent and ionic bondings opening access to thermal conductivity. I will give examples for different alloys, as e.g. binary and ternary clathrates which opens e.g. a way to novel redox-based preparation routes.*



**Ba<sub>8</sub>Au<sub>6</sub>Ge<sub>40</sub>**

Alle Zuhörer sind ab 17:00 Uhr zum Kaffee vor dem Hörsaal eingeladen.