

Professor Hubert Schmidbaur, Emeritus

School of Natural Sciences, Department of Chemistry
Technical University of Munich

Research Areas (1962-2024)

Silicon and germanium chemistry: Siloxanes, silanols and silanolates;
heterosiloxanes with main group and transition elements;
silanes and germanes for chemical vapor deposition.

Phosphorus Chemistry: Inorganic chemistry with phosphorus ylides; phosphine imines and oxides;
phosphine boranes; phosphines, phosphoranes and carbodiphosphoranes; arsenic and antimony analogs.

Gallium chemistry: Gallium alkyls and hydrides, carbene analogues, selective gallium(III) complexation; indium analogs.

Arene complexes of post-transition metals (Ga, In, Tl; Sn, Pb).

Bioinorganic chemistry of beryllium and magnesium.

Chemistry of gold and silver:

Gold in unusual and extreme coordination environments and oxidation states.
Structure and bonding in mono- and polynuclear gold compounds;
gold-decorated dendrimers.
Aurophilicity and metallophilicity.
Relativistic effects in the chemistry of the elements.

Collaboration with external groups (1962 – 2024)

Quantum chemistry

P. Pyykkö, University of Helsinki;
P. Schwerdtfeger, University of Auckland;
N. Rösch, TUM;
H. F. Schäfer, UC Berkeley,
P. v. Ragué Schleyer, University of Erlangen-Nuremberg,
W. H. E. Schwarz, University of Siegen.

Crystallography:

E. Hellner, University of Marburg;
P. J. Wheatley, Monsanto Laboratories, Zürich;
G. Huttner, U. Schubert, TUM;
U. Thewalt, University of Ulm;
O. Orama, University of Helsinki;
C. Krüger, MPI Mülheim;
R. E. Cramer, University of Hawaii;
R. Bau, University of Southern California, Los Angeles;
P. C. Healey, A. H. White, University of Western Australia, Perth.

Vibrational spectroscopy:

J. Weidlein, University of Stuttgart;
J. Michl, University of Colorado, Boulder.

NMR spectroscopy:

D. Scheutzow, University of Würzburg;
F. H. Köhler, TUM;
K. Karaghiosoff, LMU.

NQR spectroscopy:

Decca Laboratories, UK;
P. Burkert, TUM.

Mössbauer spectroscopy:

F. E. Wagner, TUM.

PE spectroscopy, ESCA:

H. Bock, K. A. Ostoja-Starzewski, University of Frankfurt;
G. P. van der Kelen, University of Gent.

Electron diffraction:

E. A. V. Ebsworth, D. W. H. Rankin, University of Edinburgh;
N. Mitzel, Universities of Münster and Bielefeld.

Chemical Syntheses:

D. Seyferth, MIT;
J. P. Fackler, Texas A&M University, College Station;
W. C. Kaska, UC Santa Barbara;
H. G. Raubenheimer, University of Stellenbosch;

J. Gilje, University of Hawaii;
G. A. Bowmaker, University of Auckland;
M. A. Cinellu, University of Sassari;
F. Kraus, TUM.

Chemical Vapor Deposition:

G. Winterling, MBB Munich.

Pharmaceutical Chemistry:

J. Helbig, Verla-Pharm.