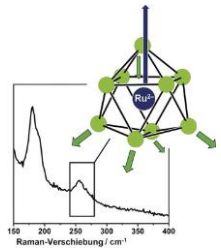
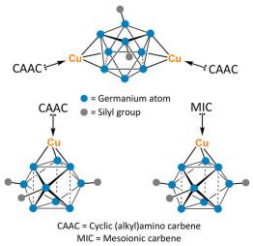
Intermetalloid Tetrel Atom Clusters

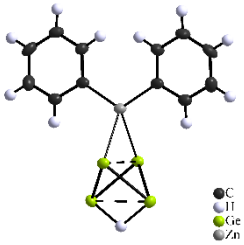


Metallo-Käfige für Metall-Anionen: Hochgeladene $[Co@Ge_9]^{5-}$- und $[Ru@Sn_9]^{6-}$-Cluster mit sphärisch eingelagerten Co^-- und Ru^{2-}-Anionen
B. J. L. Witzel, W. Klein, J. V. Dums, M. Boyko, T. F. Fässler
Angew. Chem. 131 (2019), 13040–13045 (DOI: 10.1002/ange.201907127)

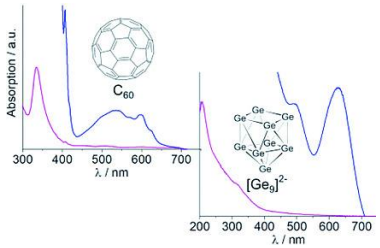
Metallocages for Metal Anions: Highly Charged $[Co@Ge_9]^{5-}$ and $[Ru@Sn_9]^{6-}$ Clusters Featuring Spherically Encapsulated Co^{1-} and Ru^{2-} Anions
Angew. Chem. Int. Ed. 58 (2019), 12908–12913 (DOI: 10.1002/anie.201907127)



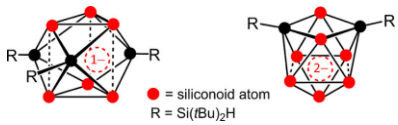
Silylated Ge_9 Clusters as New Ligands for Cyclic (Alkyl)amino and Mesoionic Carbene Copper Complexes
L. J. Schiegerl, M. Melaimi, D. R. Tolentino, W. Klein, G. Bertrand, T. F. Fässler
Inorg. Chem. 58 (2019), 3256–2364 (DOI: 10.1021/acs.inorgchem.8b03338)



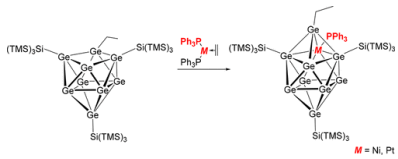
$[(\mu_2\text{-}H)(\eta^2\text{-}Ge_4)ZnPh_2]^{3-}$, an Edge-On Protonated E_4 Cluster Establishing the First Three-Center Two-Electron Ge-H-Ge Bond
T. Henneberger, W. Klein, J. V. Dums, T. F. Fässler
Chem. Commun. 54 (2018), 12381–12384 (DOI: 10.1039/C8CC06843G)



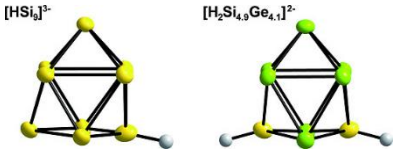
On the Affinity between Fullerenes and Deltahedral Zintl Ions: A UV/Vis Spectroscopic Investigation
S. Frischhut, J. G. Machado de Carvalho, A. J. Karttunen, T. F. Fässler
Z. Anorg. Allg. Chem. 644 (2018), 1337–1343 (DOI: 10.1002/zaac.201800293)



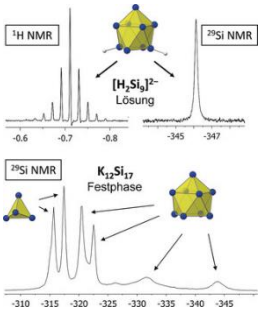
Anionic Siliconoids from Zintl Phases: $R_3Si_9^-$ with Six and $R_2Si_9^{2-}$ with Seven Unsubstituted Exposed Silicon Cluster Atoms (R = $Si(^tBu)_2H$)
L. J. Schiegerl, A. J. Karttunen, W. Klein, T. F. Fässler
Chem. Eur. J. 24 (2018), 19171–19174 (DOI: 10.1002/chem.201805442)



Capping nido-Nonagermanide Clusters with M-PPh_3 and Dynamics in Solution: Synthesis and Structure of closo-$[(Me_3Si)_3Si]_3Et[Ge_9M](PPh_3)$ (M = Ni, Pt)
S. Frischhut, F. Kaiser, W. Klein, M. Drees, F. E. Kühn, T. F. Fässler
Organometallics 37 (2018), 4560–4567 (DOI: 10.1021/acs.organomet.8b00459)

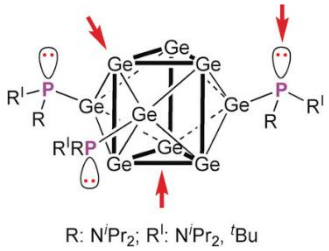


Silicon Containing Nine Atom Clusters from Liquid Ammonia Solution: Crystal Structures of the First Protonated Clusters $[HSi_9]^{3-}$ and $[H_2\{Si/Ge\}_9]^{2-}$
T. Henneberger, W. Klein, T. F. Fässler
Z. Anorg. Allg. Chem. 644 (2018), 1018–1027 (DOI: 10.1002/zaac.201800227)

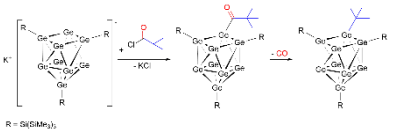


Charged Si_9 Clusters in Neat Solids and the Detection of $[H_2Si_9]^{2-}$ in Solution: A Combined NMR, Raman, Mass Spectrometric, and Quantum Chemical Investigation
L. J. Schiegerl, A. J. Karttunen, J. Tillmann, S. Geier, G. Raudaschl-Sieber, M. Waibel, T. F. Fässler
Angew. Chem. 130 (2018), 13132–13137 (DOI: 10.1002/ange.201804756)
Angew. Chem. Int. Ed. 57 (2018), 12950–12955 (DOI: 10.1002/anie.201804756)

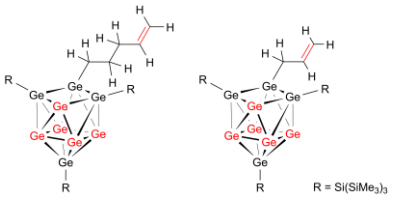
Intermetalloide Cluster: Moleküle und Festkörper im Dialog
K. Mayer, J. Weßing, T. F. Fässler, R. A. Fischer
Angew. Chem. 130 (2018), 14570–14593 (DOI: 10.1002/ange.201805897)
Intermetalloid Clusters: Molecules and Solids in a Dialogue
Angew. Chem. Int. Ed. 57 (2018), 14372–14393 (DOI: 10.1002/anie.201805897)



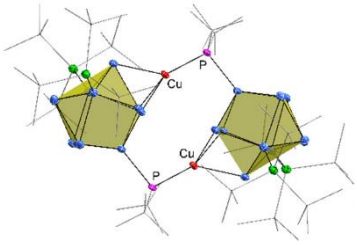
Synthesis and Reactivity of Multiple Phosphine-Functionalized Nonagermanide Clusters
F. S. Geitner, W. Klein, F. F. Fässler
Angew. Chem. 130 (2018), 14717–14721 (DOI: 10.1002/ange.201803476)
Angew. Chem. Int. Ed. 57 (2018), 14509–14513 (DOI: 10.1002/anie.201803476)



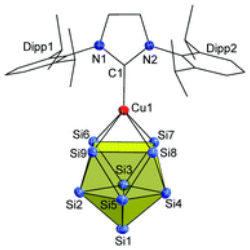
Acylation of homoatomic Ge_9 Cages and Subsequent Decarbonylation
S. Frischhut, W. Klein, M. Drees T. F. Fässler
Chem. Eur. J. 24 (2018), 9009–9014 (DOI: 10.1002/chem.201802318)



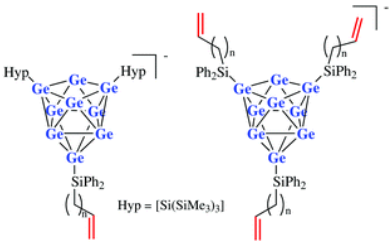
Synthesis of Low-Oxidation-State Germanium Clusters Comprising a Functional Anchor Group − Synthesis and Characterization of $[(Ge^0)_5(Ge\text{-}R)_3(Ge\text{-}(CH_2)_n\text{-}CH{=}CH2)]$ with R = $Si(SiMe_3)_3$
S. Frischhut, T. F. Fässler
Dalton Trans. 47 (2018), 3223–3226 (DOI: 10.1039/C8DT00321A)



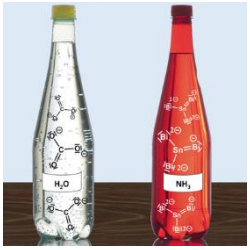
On the Variable Reactivity of Phosphine-Functionalized [Ge_9] Clusters – Zintl Cluster-substituted Phosphines or Phosphine-substituted Zintl Clusters
F. S. Geitner, C. Wallach, T. F. Fässler
Chem. Eur. J. 24 (2018), 4103–4110 (DOI: 10.1002/chem.201705678)



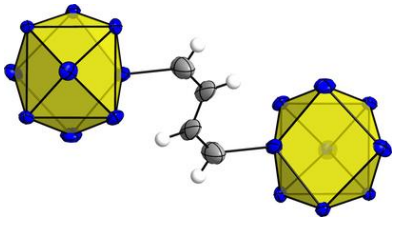
Low Oxidation State Silicon Clusters – Synthesis and Structure of $[NHC^{Dipp}Cu(\eta^4\text{-}Si_9)]^{3-}$
F. S. Geitner, T. F. Fässler
Chem. Commun. 53 (2017), 12974 – 12977 (DOI: 10.1039/C7CC07995H)



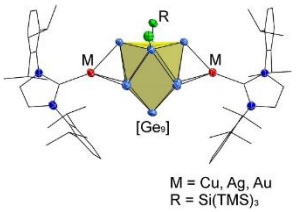
Targeted attachment of functional groups at Ge_9 clusters via silylation reactions
K. Mayer, L. J. Schiegerl, T. Kratky, S. Günther, T. F. Fässler
Chem. Commun. 53 (2017), 11798–11801 (DOI: 10.1039/C7CC06622H)



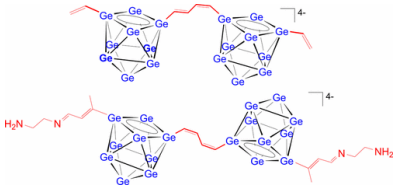
$[SnBi_3]^{5-}$ – ein Carbonat-Analogon aus Metallatomen
K. Mayer, J. V. Dums, W. Klein, T. F. Fässler
Angew. Chem. 129 (2017), 15356–15361, (DOI: 10.1002/ange.201709700)
$[SnBi_3]^{5-}$ —A Carbonate Analogue Comprising Exclusively Metal Atoms
Angew. Chem. Int. Ed. 56 (2017), 15159–15163, (DOI: 10.1002/anie.201709700)



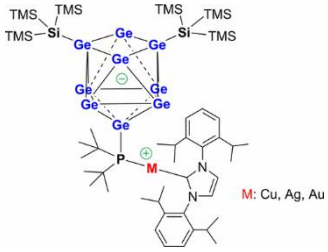
On the Mechanism of Connecting Deltahedral Zintl Clusters via Conjugated Buta-1,3-dien-1,4-diyl Functionalities: Synthesis and Structure of $[Ge_9\text{–}CH{=}CH\text{–}CH{=}CH\text{–}Ge_9]^{6-}$
M. M. Bentlohner, S. Frischhut, T. F. Fässler
Chem. Eur. J. 23 (2017), 17089–17094 (DOI: 10.1002/chem.201703494)



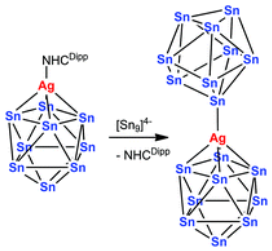
N-Heterocyclic Carbene Coinage Metal Complexes of the Germanium-Rich Metalloid Clusters $[Ge_9R_3]^-$ and $[Ge_9RI_2]^{2-}$ with R = $Si(^iPr)_3$ and RI = $Si(TMS)_3$
F. S. Geitner, M. A. Giebel, A. Pöthig, T. F. Fässler
Molecules 22 (2017), 1204 (DOI: 10.3390/molecules22071204)



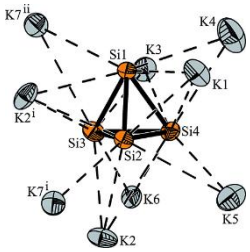
Synthesis of Zintl Triads Comprising Extended Conjugated π-Electronic Systems: $[RGe_9–CH=CH–CH=CH–Ge_9R]^{4-}$
(R: $–CH=CH_2$, $–C(CH_3)=CH–CH=N(CH_2)_2NH_2$)
S. Frischhut, M. M. Bentlohner, W. Klein, T. F. Fässler
Inorg. Chem. 56 (2017), 10691–10698 (DOI: 10.1021/acs.inorgchem.7b01643)



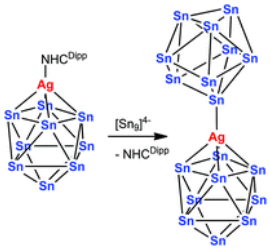
Derivatization of Phosphine Ligands with Bulky Deltahedral Zintl Clusters—Synthesis of Charge Neutral Zwitterionic Tetrel Cluster Compounds $[(Ge_9\{Si(TMS)_3\}_2)^tBu_2P]M(NHC^{Dipp})$ (M: Cu, Ag, Au)
F. S. Geitner, J. V. Dums, T. F. Fässler
J. Am. Chem. Soc. 139 (2017), 11933–11940 (DOI: 10.1021/jacs.7b05834)



Formation of the intermetalloid cluster $[AgSn_{18}]^{7-}$ – the reactivity of coinage metal NHC compounds towards $[Sn_9]^{4-}$
F. S. Geitner, W. Klein, T. F. Fässler
Dalton Trans. 46 (2017), 5796–5800 (DOI: 10.1039/c7dt00754j)



$[Si_4]^{4-}$ and $[Si_9]^{4-}$ Clusters Crystallized from Liquid Ammonia Solution – Synthesis and Characterization of $K_8[Si_4][Si_9](NH_3)_{14.6}$
C. B. Benda, T. Henneberger, W. Klein, T. F. Fässler
Z. Anorg. Allg. Chem. 643 (2017), 146–148 (DOI: 10.1002/zaac.201600369)



Formation of the intermetalloid cluster $[AgSn_{18}]^{7-}$ – the reactivity of coinage metal NHC compounds towards $[Sn_9]^{4-}$
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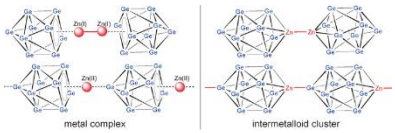
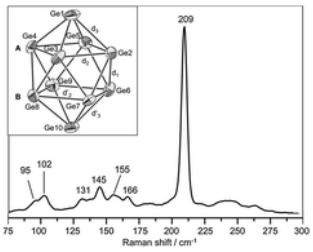
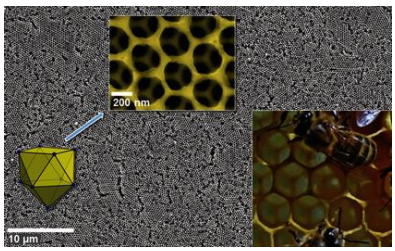


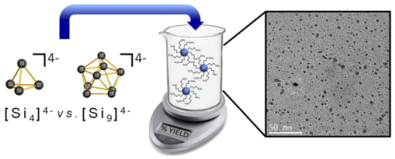
Retention of the Zn–Zn bond in $[Ge_9Zn–ZnGe_9]^{6-}$ and Formation of $[(Ge_9Zn)–(Ge_9)–(ZnGe_9)]^{8-}$ and Polymeric $^{1}_{\infty}[–(Ge_9Zn)^{2-}–]$
K. Mayer, L.-A. Jantke, S. Schulz, T. F. Fässler
Angew. Chem. 129 (2017), 2390–2395 (DOI: 10.1002/ange.201610831)
Angew. Chem. Int. Ed. 56 (2017), 2350–2355 (DOI: 10.1002/anie.201610831)



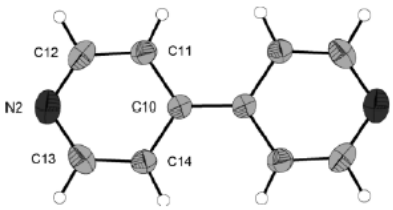
Synthesis and characterization of pristine closo*-$[Ge_{10}]^{2-}$*
M. M. Bentlohner, C. Fischer, T. F. Fässler
Chem. Commun. 52 (2016), 9841–9843 (DOI: 10.1039/C6CC04143D)



Zintl Clusters as Wet-Chemical Precursors for Germanium Nanomorphologies with Tunable Composition
M. M. Bentlohner, M. Waibel, P. Zeller, K. Sarkar, P. Müller-Buschbaum, D. Fattakhova-Rohlfing, T. F. Fässler
Angew. Chem. 128 (2016), 2487–2491 (DOI: 10.1002/ange.201508246)
Angew. Chem. Int. Ed. 55 (2016), 2441–2445 (DOI: 10.1002/anie.201508246)

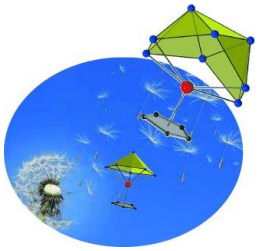


Silicon Nanoparticles by the Oxidation of $[Si_4]^{4-}$- and $[Si_9]^{4-}$-Containing Zintl Phases and Their Corresponding Yield
B. M. Nolan, T. Henneberger, M. Waibel, T. F. Fässler, S. M. Kauzlarich
Inorg. Chem. 54 (2015), 396–401 (DOI: 10.1021/ic5027398)

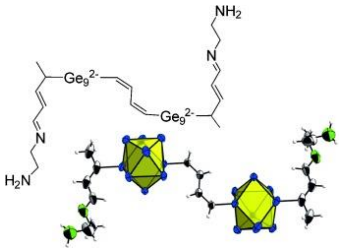


The Reduction of Pyridine by $K_{12}Si_{17}$ to the 4,4'-Bipyridine Radical Anion $[C_{10}H_8N_2]^{-\bullet}$: Crystal Structure and Spectroscopic Characterization of $[K([2.2.2]crypt)][C_{10}H_8N_2]$
C. B. Benda, T. F. Fässler
Z. Naturforsch. 69b (2014), 1119–1123 (DOI: 10.5560/ZNB.2014-4213)

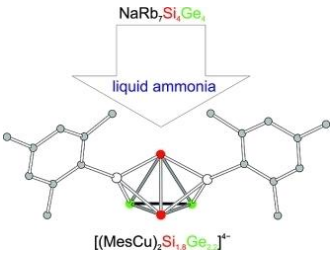
Cover Picture:
On the Formation of Intermetalloid Clusters: Titanocene(III)diammin as a Versatile Reactant Toward Nonastannide Zintl Clusters
C. B. Benda, M. Waibel, T. F. Fässler
Angew. Chem. Int. Ed. 54 (2015), 365 (DOI: 10.1002/anie.201411209)



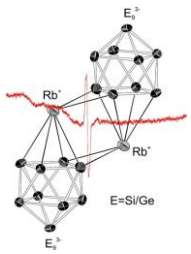
On the formation of intermetalloid clusters: Titanocen(III)diammin as a versatile reactant towards nonastannide Zintl Clusters
C. B. Benda, M. Waibel, T. F. Fässler
Angew. Chem. 127 (2015), 532–536 (DOI: 10.1002/ange.201407855)
Angew. Chem. Int. Ed. 54 (2015), 522–526 (DOI: 10.1002/anie.201407855)



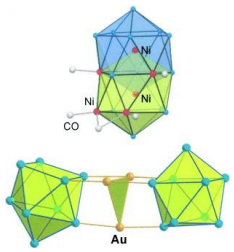
Linking Deltahedral Zintl Clusters with Conjugated Organic Building Blocks: Synthesis and Characterization of the Zintl triad [RGe$_9$–CH═CH–CH═CH–Ge$_9$R]$^{4-}$
M. M. Bentlohner, W. Klein, Z. H. Fard, L.-A. Jantke, T. F. Fässler
Angew. Chem. 127 (2015), 3819–3824 (DOI: 10.1002/ange.201410199)
Angew. Chem. Int. Ed. 54 (2015), 3748–3753 (DOI: 10.1002/anie.201410199)



NaRb$_7$(Si$_{4-x}$Ge$_x$)$_2$ - Soluble Zintl Phases Containing Heteroatomic Tetrahedral [Si$_{4-x}$Ge$_x$]$^{4-}$Clusters
M. Waibel, O. Pecher, B. Mausolf, F. Haarmann, T. F. Fässler
Eur. J. Inorg. Chem. 2013 (2013), 5541–5546 (DOI: 10.1002/ejic.201300943)



Mixed Si/Ge Nine-Atom Zintl Clusters: ESI Mass Spectrometric Investigations and Single-Crystal Structure Determination of Paramagnetic [Si$_{9-x}$Ge$_x$]$^{3-}$
M. Waibel, T. F. Fässler
Inorg. Chem. 52 (2013), 5861–5866 (DOI: 10.1021/ic302802h)



Zintl-Ionen, Käfigverbindungen und intermetalloide Cluster der Elemente der 14. und 15. Gruppe
S. Scharfe, F. Kraus, S. Stegmaier, A. Schier, T. F. Fässler
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Homoatomic Zintl Ions, Cage Compounds, and Intermetalloid Clusters of Group 14 and Group 15 Elements
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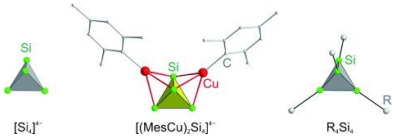

[(MesCu)$_2$(η^3-Si$_4$)]$^{4-}$ - A Mesitylcopper-Stabilized Tetrasilicide Tetraanion
M. Waibel, F. Kraus, S. Scharfe, T. F. Fässler
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