

E. Fritz-Langhals, Papers

44. Fritz-Langhals, E. Main Group Catalysis: Cationic Si(II) and Ge(II) Compounds as Catalysts in Organosilicon Chemistry. *Reactions* **2021**, 2(4), 442-456. <https://doi.org/10.3390/reactions2040028>.
43. Fritz-Langhals, E.; Werge, S.; Kneissl, S.; Piroutek, P. Novel Si(II)⁺ and Ge(II)⁺ Compounds as Efficient Catalysts in Organosilicon Chemistry: Siloxane Coupling Reaction. *Org. Process Res. Dev.* **2020**, 24, 1484-1495. <https://doi.org/10.1021/acs.oprd.0c00214>.
42. Fritz-Langhals, E. Silicon(II) Cation Cp*Si⁺ X⁻: A New Class of Efficient Catalysts in Organosilicon Chemistry. *Org. Process Res. Dev.* **2019**, 23, 2369–2377. <https://doi.org/10.1021/acs.oprd.9b00260>.
41. Ehbets, J.; Lorenzen, S.; Mahler, C.; Bertermann, R.; Berkefeld, A.; Poater, J.; Fritz-Langhals, E.; Weidner, R.; Bickelhaupt, F. M.; Tacke, R. Synthesis and Hydrolysis of Alkoxy(aminoalkyl)-diorganysilanes of the Formula Type R₂(RO)Si(CH₂)_nNH₂ (R = Alkyl, n = 1–3): A Systematic Experimental and Computational Study. *Eur. J. Inorg. Chem.* **2016**, 1641-1659. <https://doi.org/10.1002/ejic.201600077>.
40. Fritz-Langhals, E. Aldehyde and Carboxy Functional Polysiloxanes, in: Ganachaud, F.; Boileau, S.; Boury, B. Eds., *Advances in Synthesis and Supramolecular Organization*, Springer **2008**, pp. 39-50.
39. Ferstl, W.; Schwarzer, M.; Loebbecke, S.; Fritz-Langhals, E.; Stohrer, J. Process Optimization of a Catalyzed Bleach Oxidation for the Production of Functionalized Aldehydes Using Microreaction Technology. *Chem. Eng. J.* **2008**, 135, S292-S297. <https://doi.org/10.1016/j.cej.2007.07.020>.
38. Huisgen, R., Fritz-Langhals, E. 1,3-Dipolar Cycloadditions of Diphenyldiazomethane to Thiones: Rate Measurements Disclose Thiones to be Superdipolarophiles. *Heteroatom Chem.* **2006**, 17, 433-442. <https://doi.org/10.1002/hc.20262>.
37. Huisgen, R. Fritz-Langhals, E. Dichotomy of 1,3-Dipolar Cycloreversion in a Tetrasubstituted 2,5-Dihydro-1,3,4-thiadiazole, *Heteroatom Chem.* **2006**, 17, 443-448. <https://doi.org/10.1002/hc.20263>.
36. Fritz-Langhals, E. Technical Production of Aldehydes by Continuous Bleach Oxidation of Alcohols Catalyzed by 4-Hydroxy-TEMPO. *Org. Process Res. Dev.* **2005**, 37, 577-582. <https://doi.org/10.1021/op050040t>.
35. Huisgen, R.; Mloston, G.; Giera, H.; Fritz-Langhals, E.; Polborn, K.; Sustmann, R. Aliphatic Thiocarbonyl Ylides and Thiobenzophenone: Experimental Study of Regiochemistry and Methylene Transfer in Cycloadditions. *Eur. J. Org. Chem.* **2005**, 8, 1519-1531. <https://doi.org/10.1002/ejoc.200400765>.
34. Fritz-Langhals, E., Huisgen, R, Polborn, K. 1,3-Dipolar Cycloadditions, Part 129: A Novel

Dimerization Mode of a Cyclic Ketene Imine. *Chem. Eur. J.* **2004**, *10*, 4353-4357.

<https://doi.org/10.1002/chem.200400264>.

33. Huisgen, R., Fritz-Langhals, E.; Polborn, K., Karaghiosoff, K. 1,3-Dipolar Cycloadditions, Part 128. Cyclic Seven-Membered Ketene Imines from Hindered "Thiocarbonyl Ylides" and 2,3-Bis(trifluoromethyl)fumaronitrile: Properties and Surprising Reactions, *Helv. Chim. Acta* **2004**, *87*, 1426-1445. <https://doi.org/10.1002/hlca.200490130>.
32. Huisgen, R., Mloston, G., Fritz-Langhals, E.; Oshima, T. 1,3-Dipolar Cycloadditions, Part 126: Reactions of Sterically Hindered "Thiocarbonyl Ylides" with 1,2-Bis(trifluoromethyl)ethene-1,2-dicarbonitrile: Isolation of a Cyclic Seven-membered Ketene Imine, *Helv. Chim. Acta* **2002**, *85*, 2668-2685.
[https://doi-org.eaccess.ub.tum.de/10.1002/1522-2675\(200209\)85:9<2668::AID-HLCA2668>3.0.CO;2-3](https://doi-org.eaccess.ub.tum.de/10.1002/1522-2675(200209)85:9<2668::AID-HLCA2668>3.0.CO;2-3).
31. Giera, H.; Huisgen, R.; Fritz-Langhals, E.; Polborn, K. 1,3-Dipolar Cycloadditions, Part 125: Massive Steric Hindrance in Two "Thiocarbonyl Ylides": Cycloadditions with Tetra-Acceptor-Substituted Ethylenes via Zwitterionic Intermediates. *Helv. Chim. Acta* **2002**, *85*, 1523-1545.
[https://doi-org.eaccess.ub.tum.de/10.1002/1522-2675\(200206\)85:6<1523::AID-HLCA1523>3.0.CO;2-O](https://doi-org.eaccess.ub.tum.de/10.1002/1522-2675(200206)85:6<1523::AID-HLCA1523>3.0.CO;2-O).
30. Huisgen, R.; Mloston, G.; Giera, H.; Fritz-Langhals, E. Cycloadditions of Two Thiocarbonyl Ylides With α,β -Unsaturated Esters and Nitriles: Steric Course and Mechanism. *Tetrahedron* **2002**, *58*, 507-519. [https://doi.org/10.1016/s0040-4020\(01\)01147-4](https://doi.org/10.1016/s0040-4020(01)01147-4).
29. Huisgen, R.; Mloston, G.; Fritz-Langhals, E. 1,3-Dipolar Cycloadditions, Part 122: Cycloadditions of "Thiocarbonyl Ylides" With Tetracyanoethylene (=Ethenetetracarbonitrile): Interception of Intermediates. *Helv. Chim. Acta* **2001**, *84*, 1805-1820.
[https://doi.org/10.1002/1522-2675\(20010613\)84:6<1805::aid-hlca1805>3.0.co;2-t](https://doi.org/10.1002/1522-2675(20010613)84:6<1805::aid-hlca1805>3.0.co;2-t).
28. Huisgen, R.; Li, X.; Giera, H.; Fritz-Langhals, E. 1,3-Dipolar Cycloadditions: Part 121: "Thiobenzophenone S-Methylide", =(Diphenylmethylidenesulfonio)methanide, and C,C Multiple Bonds: Cycloadditions and Dipolarophilic Reactivities). *Helv. Chim. Acta* **2001**, *84*, 981-999.
[https://doi.org/10.1002/1522-2675\(20010516\)84:5<981::aid-hlca981>3.0.co;2-o](https://doi.org/10.1002/1522-2675(20010516)84:5<981::aid-hlca981>3.0.co;2-o).
27. Fritz-Langhals, E. Synthesis of Optically Active (2-Fluoroacyl)benzenes. *Synlett* **1999**, *11*, 1805-1807.
<https://doi.org/10.1055/s-1999-2921>.
26. Fritz-Langhals, E.; Kunath, B. Synthesis of Aromatic Aldehydes by Laccase-Mediator Assisted

- Oxidation. *Tetrahedron Lett.* **1998**, 39, 5955-5956. [https://doi.org/10.1016/s0040-4039\(98\)01215-5](https://doi.org/10.1016/s0040-4039(98)01215-5).
25. Fisera, L.; Huisgen, R.; Kalwinski, I.; Fritz-Langhals, E.; Li, X.; Mloston, G.; Polborn, K.; Rapp, J.; Sicking, W.; Sustmann, R. New Thione Chemistry. *Pure Appl. Chem.* **1996**, 68, 789-798. <https://doi.org/10.1351/pac199668040789>.
 24. Fritz-Langhals, E. Separation of Diastereomers by Distillation. A New Principle for the Preparation of Optically Active Heterocyclic Carboxylic Acids. *GIT Fachz. Lab.* **1994**, 38, 1128-1130.
 23. Fritz-Langhals, E. Alkali metal fluorides as efficient fluorinating agents. Enantiocontrolled synthesis of 2-fluoroalkyl carboxylates and 1-fluoroalkyl benzenes. *Tetrahedron: Asymmetry* **1994**, 5, 981-986. [https://doi.org/10.1016/0957-4166\(94\)80048-0](https://doi.org/10.1016/0957-4166(94)80048-0).
 22. Fritz-Langhals, E. Synthesis of optically active 1-fluoroalkylbenzenes. *Tetrahedron Lett.* **1994**, 35, 1851-1854. [https://doi.org/10.1016/s0040-4039\(00\)73178-9](https://doi.org/10.1016/s0040-4039(00)73178-9).
 21. Fritz-Langhals, E. Distillative Diastereoisomer Separation. A New Method for Preparation of Optically Active Heterocyclic Carboxylic Acids. *Angew. Chem. Int. Ed. Engl.* **1993**, 32, 753-754. <https://doi.org/10.1002/anie.199307531>.
 20. Fritz-Langhals, E.; Schütz, G. Simple Synthesis of Optically Active 2-Fluoropropanoic Acid and Analogs of High Enantiomeric Purity. *Tetrahedron Lett.* **1993**, 34, 293-296. [https://doi.org/10.1016/s0040-4039\(00\)60570-1](https://doi.org/10.1016/s0040-4039(00)60570-1).
 19. Fritz-Langhals, E., Langhals, H. Alkylation of Ketones by Use of Solid Potassium Hydroxide in Dimethyl Sulfoxide. *Tetrahedron Lett.* **1990**, 31, 859-862. [https://doi.org/10.1016/s0040-4039\(00\)94647-1](https://doi.org/10.1016/s0040-4039(00)94647-1).
 18. Huisgen, R.; Fritz-Langhals, E.; Nöth, H. A Crystalline Seven-Membered Cyclic Ketenimine from a Thiocarbonyl-S-Methylide. *J. Org. Chem.* **1990**, 55, 1412-1414. <https://doi.org/10.1021/jo00292a003>.
 17. Huisgen, R.; Fritz-Langhals, E.; Oshima, T. Ring Contraction of a Cyclic Seven-Membered Ketene Imine. *Heterocycles* **1989**, 29, 2075-2078. <https://doi.org/10.3987/com-89-5166>.
 16. Huisgen, R.; Fritz-Langhals, E.; Mloston, G.; Oshima, T. Stable Seven-Membered Ring Ketene Imine from a Thiocarbonyl Ylide and an Acceptor Olefin. *Heterocycles* **1989**, 29, 2069-2074. <https://doi.org/10.3987/com-89-5165>.
 15. Huisgen, R.; Fritz-Langhals, E. Thiones as Superdipolarophiles. *Tetrahedron Lett.* **1989**, 30, 5369-5372. [https://doi.org/10.1016/s0040-4039\(01\)93789-x](https://doi.org/10.1016/s0040-4039(01)93789-x).

14. Mloston, G.; Fritz-Langhals, E.; Huisgen, R. 1,3-Cycloadditions of Aliphatic Thione S-Methylides to Dimethyl 2,3-dicyanofumarate and 2,3-Dicyanomaleate; a Test Case for Steric Course and Mechanism. *Tetrahedron Lett.* **1989**, *30*, 5373-5376. [https://doi.org/10.1016/s0040-4039\(01\)93790-6](https://doi.org/10.1016/s0040-4039(01)93790-6).
13. Huisgen, R.; Fritz-Langhals, E.; Mloston, G.; Oshima, T.; Rapp, J. New Cycloadditions in Organic Sulfur Chemistry. *Lectures in Heterocycl. Chem.* **1987**, *9*, 1-11.
12. Huisgen, R.; Eichenauer, U.; Fritz-Langhals, E.; Mitra, A.; Moran, J.R. 1,3-Dipolar Cycloadditions, Part 92: Reactions of Aliphatic Diazo Compounds with Fourfold Acceptor-Substituted Ethylenes. *Chem. Ber.* **1987**, *120*, 153-158. <https://doi.org/10.1002/cber.19871200206>.
11. Huisgen, R.; Fritz-Langhals, E.; Nöth, H. Further Contributions to the Stereospecificity of 1,3-Dipolar Cycloadditions of Thiocarbonyl Ylides, *Tetrahedron Lett.* **1986**, *27*, 5475-5478. [https://doi.org/10.1016/s0040-4039\(00\)85241-7](https://doi.org/10.1016/s0040-4039(00)85241-7).
10. Huisgen, R.; Mloston, G.; Fritz-Langhals, E. The First Two-Step 1,3-Dipolar Cycloadditions: Non-Stereospecificity. *J. Am. Chem. Soc.* **1986**, *108*, 6401-6402. <https://doi.org/10.1021/ja00280a053>.
9. Huisgen, R.; Mloston, G.; Fritz-Langhals, E. The First Two-Step 1,3-Dipolar Cycloadditions: Interception of an Intermediate. *J. Org. Chem.* **1986**, *51*, 4085-4087. <https://doi.org/10.1021/jo00371a039>.
8. Fritz-Langhals, E.; Balli, H. Novel Dimethine Merocyanine Dyes Undergoing J-Aggregation in Highly Dilute Solution. *Helv. Chim. Acta* **1985**, *68*, 1782-1797. <https://doi.org/10.1002/hlca.19850680633>.
7. Fritz-Langhals, E.; Langhals, H., Rüchardt, C. Detection of a Radical Chain Mechanism for the Knabe Reaction of 1,2-Dihydro-2-methylpapaverine. *Chem. Ber.* **1984**, *117*, 1436-1454. <https://doi.org/10.1002/cber.19841170414>.
6. Fritz-Langhals, E.; Langhals, H., Rüchardt, C. Simple Synthesis of 5-Cyano-2-pyridinecarboxylic Acid and Its Amide. *Chem. Ber.* **1984**, *117*, 1259-1261. <https://doi.org/10.1002/cber.19841170340>.
5. Finkentey, C.; Fritz-Langhals, E.; Langhals, H. Simple Synthesis of 3-Methoxypyridine and Its Analogs by Alkylation Reactions. *Chem. Ber.* **1983**, *116*, 2394-2397. <https://doi.org/10.1002/cber.19831160631>.
4. Fritz-Langhals, E.; Langhals, H., Rüchardt, C. A Synthesis for Nornicotine- and Nicotine-2-carboxamide. *Liebigs Ann. Chem.* **1983**, *2*, 330-333. <https://doi.org/10.1002/jlac.198319830217>.
3. Fritz, E.; Langhals, H.; Rüchardt, C. A new simple synthesis of fusaric acid and other 5-alkyl-2-pyridinecarboxylic acids. *Liebigs Ann. Chem.* **1982**, *5*, 930-949.

<https://doi.org/10.1002/jlac.198219820513>.

2. Fritz, E.; Langhals, H.; Rüchardt, C. A Simple Synthesis of Tetramethyloxamide. *Liebigs Ann. Chem.* **1981**, *6*, 1015-1017. <https://doi.org/10.1002/jlac.198119810606>.
1. Langhals, H.; Fritz, E.; Mergelsberg, I. A Simple Nonhazardous Procedure for the Drying of Tert-Butyl Hydroperoxide. *Chem. Ber.* **1980**, *113*, 3662-3665. <https://doi.org/10.1002/cber.19801131124>.