

Forschungsprofil

Name	Christoph Fleckenstein
Akademische Ausbildung	<p>2004 – 2008: Dissertation TU Darmstadt</p> <p>2000 – 2004: Studium Chemieingenieurwesen, FH Fresenius, Abschluss Dipl.-Ing. (FH)</p> <p>1997 – 2000: Ausbildung zum Chemielaboranten Hoechst AG / Provadis GmbH</p>
An der Hochschule seit	2008
Fachbereich	Chemical Engineering
Schwerpunkte der Lehre	Organische Chemie
Fachliche Interessensgebiete	Organische Chemie, Homogene Katalyse, Metallorganik, Analytik, Polymerchemie, Chemische Prozessentwicklung, Produktentwicklung, New Business Development
Praxiserfahrungen	<p>01/13-heute: BASF SE, Senior Manager Global Technical Marketing / New Business Development</p> <p>11/08-12/12: BASF SE, Laborleiter, Ludwigshafen, Zentralforschung Chemische Prozessentwicklung – Zwischenprodukte</p>
Publikationen	<p>Publications in Peer Reviewed Journals:</p> <p>[13] Wagner, Jochen; Deglmann, Peter; Fuchs, Sabine; Ciesielski, Michael; Fleckenstein, Christoph A.; Doering, Manfred; <i>A flame retardant synergism of organic disulfides and phosphorous compounds</i>; <u>Polymer Degradation and Stability</u> (2016), 129, 63-76. DOI:10.1016/j.polymdegradstab.2016.03.023</p> <p>[12] Wagner, Jochen; Ciesielski, Michael; Fleckenstein, Christoph A.; Denecke, Hartmut; Garlichs, Florian; Ball, Andreas; Doering, Manfred; <i>Benign and High-Yielding, Large-Scale Synthesis of Diphenylphosphinodithioic Acid and Related Compounds</i>; <u>Org. Proc.Res. Dev.</u> (2013), 17(1), 47-52. DOI:10.1021/op300147f.</p>

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Fleckenstein, Christoph A.; Plenio, Herbert; *Highly efficient Suzuki-Miyaura coupling of heterocyclic substrates through rational reaction design*; Chem. Eur. J. (2008), 14(14), 4267-4279. DOI:10.1002/chem.200701877.

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Fleckenstein, Christoph A.; Kadyrov, Renat; Plenio, Herbert; *Efficient Large-Scale Synthesis of 9-Alkylfluorenyl Phosphines for Pd-Catalyzed Cross-Coupling Reactions*; Org. Proc. Res. Dev. (2008), 12(3), 475-479. DOI:10.1021/op7001479.

	<p>[5] Fleckenstein, Christoph A.; Plenio, Herbert; Aqueous cross-coupling. <i>Highly efficient Suzuki-Miyaura coupling of N-heteroaryl halides and N-heteroarylboronic acids</i>; <u>Green Chem.</u> (2007), 9(12), 1287-1291. DOI:10.1039/b711965h.</p> <p>[4] Fleckenstein, Christoph; Roy, Sutapa; Leuthaeusser, Steffen; Plenio, Herbert; <i>Sulfonated N-heterocyclic carbenes for Suzuki coupling in water</i>; <u>Chem. Commun.</u> (2007), (27), 2870-2872. DOI:10.1039/b703658b.</p> <p>[3] Fleckenstein, Christoph A.; Plenio, Herbert; <i>1-Indenyldialkylphosphines and Cyclopentadienyldialkylphosphines as Ligands for High-Activity Palladium-Catalyzed Cross-Coupling Reactions with Aryl Chlorides</i>; <u>Organometallics</u> (2007), 26(10), 2758-2767. DOI:10.1021/om070094m.</p> <p>[2] Fleckenstein, Christoph A.; Plenio, Herbert; <i>9-Fluorenylphosphines for the Pd-catalyzed Sonogashira, Suzuki, and Buchwald-Hartwig coupling reactions in organic solvents and water</i>; <u>Chem. Eur. J.</u> (2007), 13(9), 2701-2716. DOI:10.1002/chem.200601142.</p> <p>[1] Fleckenstein, Christoph A.; Plenio, Herbert; <i>Redox-switchable phase tags - facile Mitsunobu reactions using ferrocenyl-tagged triphenylphosphine</i>; <u>Adv. Synth. Catal.</u> (2006), 348(9), 1058-1062. DOI:10.1002/adsc.200606024.</p>
Expertentätigkeit	Referent für die Firma Novia im Bereich Spektreninterpretation (NMR, MS)

Patente	<p>(selected):</p> <p>[33] Fleischhaker, Friederike; Misske, Andrea; Fleckenstein, Christoph; Yu, Miran; Kaller, Martin; Meisenburg, Uwe; <i>Curable composition and method for curing a composition</i>; PCT Int. Appl. (2017), WO 2017005491.</p> <p>[32] Misske, Andrea; Fleischhaker, Friederike; Fleckenstein, Christoph; Kaller, Martin; Stengel, Ulrik; Blanchot, Mathieu; Pazicky, Marek; Nair, Ritesh; <i>Dihydro-oligo-cyclopentadienyl (meth)acrylates</i>; PCT Int. Appl. (2016), WO 2016165979 .</p> <p>[31] Misske, Andrea; Fleischhaker, Friederike; Fleckenstein, Christoph; Kaller, Martin; Nair, Ritesh; Stengel, Ulrik; Blanchot, Mathieu; <i>Method for producing isosorbide di(meth)acrylate</i>; PCT Int. Appl. (2016), WO 2016135191.</p> <p>[30] Misske, Andrea; Fleischhaker, Friederike; Fleckenstein, Christoph; Kaller, Martin; Stengel, Ulrik; Blanchot, Mathieu; Stoer, Claudia; Nair, Ritesh; <i>Method for producing isosorbide ethoxylate dimethacrylate</i>; PCT Int. Appl. (2016), WO 2016135190.</p> <p>[29] Fleckenstein, Christoph; Blanchot, Mathieu; Blank, Benoit; Kaller, Martin; Stengel, Ulrik; Misske, Andrea; Fleischhaker, Friederike; Nair, Ritesh; <i>Lipase catalyzed production of (meth)acrylic acid esters of furfuryl alcohol</i>; PCT Int. Appl. (2016), WO 2016102281.</p> <p>[28] Misske, Andrea; Fleischhaker, Friederike; Fleckenstein, Christoph; Kaller, Martin; Stengel, Ulrik; Blanchot, Mathieu; Nair, Ritesh; <i>Process for preparing heonone (meth)acrylate</i>; U.S. Pat. Appl. Publ. (2016), US 20160152580.</p>
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Misske, Andrea; Fleischhaker, Friederike; Fleckenstein, Christoph; Kaller, Martin; Stengel, Ulrik; Blanchot, Mathieu; Nair, Ritesh; *Preparation of C8-24 alkyl (meth)acrylates by transesterification of methyl(meth)acrylate with C8-24 alkanols*; U.S. Pat. Appl. Publ. (2016), US 20160090348.

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Balbo Block, Marco; Ferbitz, Jens; Fleckenstein, Christoph; Hupka, Birgit; *Phosphorus containing polyol flame retardants, their manufacture and use*; PCT Int. Appl. (2014), WO 2014170316 A1 20141023

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Koenig, Alexander; Fleckenstein, Christoph; Herbst, Heinz; Xue, Siqi; *Preparation of anti-corrosive phosphinate polyamide flame retardant compositions*; PCT Int. Appl. (2014), WO 2014016386 A1 20140130.

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Xalter, Rainer; Herbst, Heinz; Fleckenstein, Christoph; Stoll, Klaus; *Phosphinyliminophosphoranes as flame retardants for thermoplastic polymers*; PCT Int. Appl. (2013), WO 2013174791 A1 20131128.

	<p>[20] Fleckenstein, Christoph; Denecke, Hartmut; Fuchs, Sabine; Mueller, Matthias; Doering, Manfred; Cisielski, Michael; Wagner, Jochen; Deglmann, Peter; Nalawade, Sameer; Gutmann, Peter; et al; <i>Synthesis of polyphenol disulfides for fireproofing agents for polymers</i>; PCT Int. Appl. (2013), WO 2013135701 A1 20130919.</p> <p>[19] Fleckenstein, Christoph; Denecke, Hartmut; Fuchs, Sabine; Mueller, Matthias; Doering, Manfred; Cisielski, Michael; Wagner, Jochen; Deglmann, Peter; Nalawade, Sameer; Gutmann, Peter; et al; <i>Production of polyphenol disulfides and their use as fireproofing agents in polymer compositions</i>; Eur. Pat. Appl. (2013), EP 2628762 A2 20130821.</p> <p>[18] Fleckenstein, Christoph; Denecke, Hartmut; <i>Production of sugar (thio)phosphates useful as fireproofing agents for plastics</i>; Eur. Pat. Appl. (2013), EP 2574615 A1 20130403.</p> <p>[17] Bellin, Ingo; Denecke, Hartmut; Fuchs, Sabine; Fleckenstein, Christoph; Deglmann, Peter; Hofmann, Maximilian; Spies, Patrick; Hahn, Klaus; Massonne, Klemens; Janssens, Geert; <i>Flame-retardant polymer foams with halogen-free flame-retardant agents containing phosphorous on a sugar basis</i>; Eur. Pat. Appl. (2013), EP 2574614 A1 20130403.</p> <p>[16] Hahn, Klaus; Fuchs, Sabine; Bellin, Ingo; Spies, Patrick; Hofmann, Maximilian; Deglmann, Peter; Massonne, Klemens; Denecke, Hartmut; Fleckenstein, Christoph; Janssens, Geert; et al; <i>Polymer flame retardant for polystyrene foams</i>; PCT Int. Appl. (2013), WO 2013017417 A1 20130207.</p> <p>[15] Hahn, Klaus; Fuchs, Sabine; Bellin, Ingo; Spies, Patrick; Hofmann, Maximilian; Deglmann, Peter; Massonne, Klemens; Denecke, Hartmut; Fleckenstein, Christoph; Janssens, Geert; et al; . <i>Phosphorylated polyether or</i></p>
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Balbo Block, Marco; Ferbitz, Jens; Henze, Oliver Steffen; Fleckenstein, Christoph; Massonne, Klemens; *Derivatives of diphosphines as flame retardants for polyurethanes*; PCT Int. Appl. (2011), WO 2011092232 A1 20110804.

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Fleckenstein, Christoph; Denecke, Hartmut; Bellin, Ingo; Kriha, Olaf; Spies, Patrick; Fuchs, Sabine; Massonne, Klemens; Hahn, Klaus; Deglmann, Peter; Hofmann, Maximilian; et al; *Organic phosphorus compounds for fire retardants for plastic foams*; PCT Int. Appl. (2011), WO 2011083009 A1 20110714.

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Hahn, Klaus; Kriha, Olaf; Bellin, Ingo; Braun, Frank; Spies, Patrick; Sandler, Jan Kurt Walter; Janssens, Geert; Fischer, Juergen; Fleckenstein, Christoph; Denecke, Hartmut; et al; *Preparation of flame-retardant polymer foams*; PCT Int. Appl. (2011), WO 2011073141 A1 20110623.

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Hahn, Klaus; Kriha, Olaf; Bellin, Ingo; Spies, Patrick; Fuchs, Sabine; Deglmann, Peter; Massonne, Klemens; Denecke, Hartmut; Fleckenstein, Christoph; Janssens, Geert; *Halogen-free, flame-retardant polymer foams containing at least one oligophosphorus compound*; PCT Int. Appl. (2011), WO 2011029901 A1 20110317.

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Tishkov, Alexander; Denecke, Hartmut; Bellin, Ingo; Kriha, Olaf; Fleckenstein, Christoph; Hahn, Klaus; *Preparation of*

	<p><i>triphosphine oxides as flame retardants for polymeric formulations</i>; Ger. Offen. (2011), DE 102010040632 A1 20110317.</p> <p>[2] Denecke, Hartmut; Tishkov, Alexander; Gutfrucht, Norbert; Herbst, Heinz; Maase, Matthias; Xalter, Rainer; Fleckenstein, Christoph; <i>Derivatives of diphosphines as flame retardants in aromatic and/or heteroaromatic epoxy resins</i>; PCT Int. Appl. (2011), WO 2011009876 A1 20110127.</p> <p>[1] Plenio, Herbert; Fleckenstein, Christoph; Kadyrov, Renat; Almena, Juan; Monsees, Axel; Riermeier, Thomas; <i>New cyclopentadienyl, indenyl or fluorenyl substituted phosphine compounds and their use in catalytic reactions</i>; PCT Int. Appl. (2008), WO 2008025673 A1 20080306.</p>
<p>Wie werden (eigene) Forschungsergebnisse in die Lehre eingebracht?</p>	<p>Beispiele in den Vorlesungen</p>