## GEORGE PAPADOGIANAKIS

**Research Fields:** Catalytic hydroformylation, carbonylation, hydrocarboxylation, copolymerization, hydrogenation and oxidation reactions of olefins, alcohols, polydienes and renewable carbohydrates such as inulin, fructose and derivatives of carbohydrates employing water-soluble transition metal complexes in aqueous and aqueous/organic two-phase systems. Micellar catalysis. Mechanistic investigations of homogeneously catalysed reactions

## PUBLICATIONS

1) B. Fell and G. Papadogianakis
"Rhodium-catalyzed micellar two-phase hydroformylation of 1-tetradecene with surface active sulfobetaine derivatives of tris(2-pyridyl)phosphine as water-soluble complex ligands"
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2) B. Fell, G. Papadogianakis, W. Konkol, J. Weber and H. Bahrmann
"Hydrolytic stable ammonium salts of sulfonated organic phosphites and their use as cocatalysts in the rhodium-catalyzed hydroformylation of olefins"
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3) B. Fell and G. Papadogianakis
"Rhodium-catalyzed two-phase hydroformylation of hex-1-ene with sulfonated tris(4-fluorophenyl)phosphines as water-soluble complex ligands"
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4) B. Fell, Ch. Schobben and G. Papadogianakis
"Hydroformylation of homologous ω-alkenecarboxylic acid methyl esters catalyzed by water soluble rhodium carbonyl/tertiary phosphine complexes''
*J. Mol. Catal. A: Chem.*, **101** (1995) 179-186.

5) S. Kanagasabapathy, Z. Xia, G. Papadogianakis and B. Fell
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6) G. Papadogianakis, L. Maat and R.A. Sheldon
"Catalytic Conversions in Water: a Novel Carbonylation Reaction Catalysed by Palladium Trisulfonated Triphenylphosphine Complexes''
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8) G. Papadogianakis and R.A. Sheldon
"Catalytic Conversions in Water: Environmentally Attractive Processes Employing Water Soluble Transition Metal Complexes''
*New J. Chem.*, **20** (1996) 175-185.

9) G. Papadogianakis, L. Maat and R.A. Sheldon
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10) G. Papadogianakis, L. Maat and R.A. Sheldon
"Catalytic Conversions in Water. Part 5: Carbonylation of 1-(4-isobutylphenyl)ethanol to Ibuprofen Catalysed by Water-Soluble Palladium-Phosphine Complexes in a Two-Phase System''
*J. Chem. Technol. Biotechnol.***70** (1997) 83-91.

11) G. Papadogianakis, G. Verspui, L. Maat and R.A. Sheldon
"Catalytic Conversions in Water. Part 6: A Novel Biphasic Hydrocarboxylation of Olefins Catalyzed by Palladium TPPTS Complexes [TPPTS= $P(C_6H_4$-*m*-$SO_3Na)_3$]''
*Catal. Lett.*, **47** (1997) 43-46.

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"Catalytic Conversions in Water. Part 7: An Environmentally Benign Concept for Heterogenization of Homogeneous Catalysis''
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"Catalytic conversions in water. Part 9. High activity of the Pd/dpppr-s/Brönsted acid system in the alternating copolymerization of ethene and carbon monoxide {dpppr-s = $C_3H_6$-1,3-$[P(C_6H_4$-*m*- $SO_3Na)_2]_2$}''
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15) G. Papadogianakis, L. Maat and R.A. Sheldon
"Tris[tris(sodium *m*-sulfonatophenyl) phosphino]palladium(0) enneahydrate''
*Inorg. Synth.*, **32** (1998) 25-29.

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"Catalytic conversions in water. Part 10. Aerobic oxidation of terminal olefins to methyl ketones catalysed by water soluble palladium complexes''
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***PATENTS***

1) H. Bahrmann, B. Fell and G. Papadogianakis
"Preparation of hydrolysis stable organic phosphites''
*DE* 3 942 787 B1 (1989), *EP* 0 435 071 B1 (1990), *US* 632 465 (1990) to **Hoechst AG**. *Chem. Abstr.*, **115** (1991) 183583c

2) H. Bahrmann, B. Fell and G. Papadogianakis
"Process for the preparation of aldehydes''
*DE* 3 942 954 B1 (1989), *EP* 0 435 084 B1 (1990), *US* 632 464 (1990) to **Hoechst AG**. *Chem. Abstr.*, **115** (1991) 255627v.

3) G. Papadogianakis, B. Fell and H. Bahrmann
"Preparation of sulfonated tris(*p*-fluorophenyl)phosphines''
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*U.S. Patent* 5 536 874 (1996) to **Hoechst Celanese Corp**.

5) G.A. Verspui, G. Papadogianakis, R.A. Sheldon
"Polyketones production by polymerising a mixture of carbon monoxide and alkylenically unsaturated hydrocarbon"
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***CHAPTERS IN BOOKS***

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2) R. A. Sheldon and G. Papadogianakis
"*Oxidations*'' in "*Aqueous-Phase Organometallic Catalysis: Concepts and Applications*'' edited by B.Cornils and W.A. Herrmann
Wiley-VCH, Weinheim, **1998**, pp.506-512.

3) G. Papadogianakis
"*Tenside Ligands*'' in "*Aqueous-Phase Organometallic Catalysis*'' edited by B.Cornils and W.A. Herrmann, Wiley-VCH, Weinheim, 2nd completely revised and enlarged edition, **2004**, pp.158-173.