Hans Niemantsverdriet

List of Publications by Citations

345 papers	12,924 citations	58 h-index	95 g-index
385 ext. papers	14,008 ext. citations	5.1 avg, IF	6.44 L-index

#	Paper	IF	Citations
345	**2003**,		435
344	Basic Reaction Steps in the Sulfidation of Crystalline MoO3 to MoS2, As Studied by X-ray Photoelectron and Infrared Emission Spectroscopy. *The Journal of Physical Chemistry*, **1996**, 100, 14144-14150		360
343	Surface Science Approach to Modeling Supported Catalysts. *Catalysis Reviews - Science and Engineering*, **1997**, 39, 77-168	12.6	321
342	Structure of Amorphous MoS3. *The Journal of Physical Chemistry*, **1995**, 99, 9194-9200		314
341	Electrocatalysts for the generation of hydrogen, oxygen and synthesis gas. *Progress in Energy and Combustion Science*, **2017**, 58, 1-35	33.6	311
340	Behavior of metallic iron catalysts during Fischer-Tropsch synthesis studied with Mössbauer spectroscopy, x-ray diffraction, carbon content determination, and reaction kinetic measurements. *The Journal of Physical Chemistry*, **1980**, 84, 3363-3370		310
339	Thermal desorption analysis: Comparative test of ten commonly applied procedures. *Surface Science*, **1990**, 233, 355-365	1.8	305
338	Fundamental understanding of deactivation and regeneration of cobalt Fischer–Tropsch synthesis catalysts. *Catalysis Today*, **2010**, 154, 271-282	5.3	259
337	Sulfidation Study of Molybdenum Oxide Using MoO3/SiO2/Si(100) Model Catalysts and Mo-IV3-Sulfur Cluster Compounds. *Journal of Catalysis*, **1995**, 157, 698-705	7.3	185
336	Carbon deposition as a deactivation mechanism of cobalt-based Fischer–Tropsch synthesis catalysts under realistic conditions. *Applied Catalysis A: General*, **2009**, 354, 102-110	5.1	176
335	Cobalt Fischer-Tropsch synthesis: Deactivation by oxidation?. *Catalysis Today*, **2007**, 123, 293-302	5.3	165
334	Cellulose Model SurfacesSimplified Preparation by Spin Coating and Characterization by X-ray Photoelectron Spectroscopy, Infrared Spectroscopy, and Atomic Force Microscopy. *Langmuir*, **2003**, 19, 5735-5741	4	165
333	The conversion of di-σ-bonded ethylene to ethylidyne on Pt(111) monitored with sum frequency generation: evidence for an ethylidene (or ethyl) intermediate. *Surface Science*, **1995**, 328, 111-118	1.8	149
332	The dissociation kinetics of NO on Rh(111) as studied by temperature programmed static secondary ion mass spectrometry and desorption. *Journal of Chemical Physics*, **1994**, 101, 10052-10063	3.9	146
331	Chemical Kinetics and Catalysis. *Fundamental and Applied Catalysis*, **1995**,	1	142
330	Highly dispersed platinum in metal organic framework NH2-MIL-101(Al) containing phosphotungstic acid □Characterization and catalytic performance. *Journal of Catalysis*, **2012**, 289, 42-52	7.3	133
329	Characterization of polymer solar cells by TOF-SIMS depth profiling. *Applied Surface Science*, **2003**, 203-204, 547-550	6.7	126

328	On the time-dependent behavior of iron catalysts in Fischer-Tropsch synthesis. *Journal of Catalysis*, **1981**, 72, 385-388	7.3	118
327	Correlation between Hydrodesulfurization Activity and Order of Ni and Mo Sulfidation in Planar Silica-Supported NiMo Catalysts: The Influence of Chelating Agents. *Journal of Catalysis*, **2001**, 197, 26-33	7.3	117
326	Relationship between Iron Carbide Phases (Fe2C, Fe7C3, and Fe5C2) and Catalytic Performances of Fe/SiO2 Fischer Tropsch Catalysts. *ACS Catalysis*, **2018**, 8, 3304-3316	13.1	116
325	Structure and catalytic properties of molybdenum oxide catalysts supported on zirconia. *Journal of Catalysis*, **2004**, 226, 283-291	7.3	115
324	XANES study of the susceptibility of nano-sized cobalt crystallites to oxidation during realistic Fischer Tropsch synthesis. *Applied Catalysis A: General*, **2006**, 312, 12-19	5.1	114
323	**2007**,		106
322	Low Surface Energy Polymeric Films from Novel Fluorinated Blocked Isocyanates. *Macromolecules*, **2004**, 37, 408-413	5.5	105
321	Sulfidation mechanism by molybdenum catalysts supported on silica/silicon(100) model support studied by surface spectroscopy. *The Journal of Physical Chemistry*, **1993**, 97, 6477-6483		104
320	Light-tuned selective photosynthesis of azo- and azoxy-aromatics using graphitic CN. *Nature Communications*, **2018**, 9, 60	17.4	101
319	The role of electron donors on lateral surfaces of MgCl2-supported Ziegler Natta catalysts: Observation by AFM and SEM. *Journal of Catalysis*, **2008**, 257, 81-86	7.3	97
318	A DFT study of the adsorption and dissociation of CO on Fe(100): influence of surface coverage on the nature of accessible adsorption states. *ChemPhysChem*, **2005**, 6, 254-60	3.2	97
317	Mars-van Krevelen-like Mechanism of CO Hydrogenation on an Iron Carbide Surface. *Catalysis Letters*, **2009**, 133, 257-261	2.8	96
316	Sulfidation and Thiophene Hydrodesulfurization Activity of Nickel Tungsten Sulfide Model Catalysts, Prepared without and with Chelating Agents. *Journal of Catalysis*, **2000**, 196, 180-189	7.3	94
315	In situ, Cr K-edge XAS study on the Phillips catalyst: activation and ethylene polymerization. *Journal of Catalysis*, **2005**, 230, 98-108	7.3	93
314	Preparation and characterisation of spherical Co/SiO2 model catalysts with well-defined nano-sized cobalt crystallites and a comparison of their stability against oxidation with water. *Journal of Catalysis*, **2006**, 239, 326-339	7.3	92
313	Surface Science Model of a Working Cobalt-Promoted Molybdenum Sulfide Hydrodesulfurization Catalyst: Characterization and Reactivity. *The Journal of Physical Chemistry*, **1996**, 100, 17722-17724		84
312	Surface roughness effects in quantitative XPS: magic angle for determining overlayer thickness. *Applied Surface Science*, **1997**, 115, 342-346	6.7	83
311	Structure sensitivity in the CO oxidation on rhodium: Effect of adsorbate coverages on oxidation kinetics on Rh(100) and Rh(111). *Journal of Chemical Physics*, **2000**, 113, 5457	3.9	83

310	Thermal desorption of strained monoatomic Ag and Au layers from Ru(001). *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1987**, 5, 875-878	2.9	82
309	Deposition of inorganic salts from solution on flat substrates by spin-coating: theory, quantification and application to model catalysts. *Applied Surface Science*, **1995**, 84, 339-346	6.7	81
308	A comparison of cobalt and iron based slurry phase Fischer‐Tropsch synthesis. *Catalysis Today*, **2013**, 215, 112-120	5.3	80
307	Insight into the formation of the active phases in supported NiW hydrotreating catalysts. *Applied Catalysis A: General*, **2007**, 322, 16-32	5.1	76
306	Novel method for preparing cellulose model surfaces by spin coating. *Polymer*, **2003**, 44, 3621-3625	3.9	70
305	Fischer‐Tropsch Synthesis: Catalysts and Chemistry **2013**, 525-557		69
304	Alumina-Supported Cu−Ag Catalysts for Ammonia Oxidation to Nitrogen at Low Temperature. *Journal of Catalysis*, **2002**, 206, 60-70	7.3	69
303	Influence of Support-Interaction on the Sulfidation Behavior and Hydrodesulfurization Activity of Al2O3-Supported W, CoW, and NiW Model Catalysts. *Journal of Physical Chemistry B*, **2002**, 106, 5897-5906	3.4	69
302	DFT study of CO and NO adsorption on low index and stepped surfaces of gold. *Surface Science*, **2009**, 603, 2734-2741	1.8	68
301	Small-particle effects in Moessbauer spectra of a carbon-supported iron catalyst. *The Journal of Physical Chemistry*, **1985**, 89, 67-72		67
300	Hydrogen spillover in the Fischer‐Tropsch synthesis: An analysis of platinum as a promoter for cobalt‐alumina catalysts. *Catalysis Today*, **2016**, 261, 17-27	5.3	66
299	Atomic and Polymeric Carbon on Co(0001): Surface Reconstruction, Graphene Formation, and Catalyst Poisoning. *Journal of Physical Chemistry C*, **2012**, 116, 11575-11583	3.8	66
298	The adsorption of CO on Rh(100): Reflection absorption infrared spectroscopy, low energy electron diffraction, and thermal desorption spectroscopy. *Journal of Chemical Physics*, **1994**, 101, 10126-10133	3.9	66
297	The impact of cobalt aluminate formation on the deactivation of cobalt-based Fischer‐Tropsch synthesis catalysts. *Catalysis Today*, **2011**, 171, 192-200	5.3	65
296	Elementary steps in Fischer‐Tropsch synthesis: CO bond scission, CO oxidation and surface carbiding on Co(0001). *Surface Science*, **2016**, 648, 60-66	1.8	64
295	Working Surface Science Model for the Phillips Ethylene Polymerization Catalyst: Preparation and Testing. *Journal of Physical Chemistry B*, **1997**, 101, 8559-8563	3.4	64
294	Effects of manganese oxide and sulphate on the olefin selectivity of iron catalysts in the fischer tropsch reaction. *Applied Catalysis*, **1982**, 2, 273-288		64
293	Spectroscopic insights into cobalt-catalyzed Fischer-Tropsch synthesis: A review of the carbon monoxide interaction with single crystalline surfaces of cobalt. *Journal of Catalysis*, **2016**, 342, 1-16	7.3	64

292	The compensation effect and the manifestation of lateral interactions in thermal desorption spectroscopy. *Applied Surface Science*, **1988**, 31, 211-219	6.7	63
291	Bonding of Supported Chromium during Thermal Activation of the CrOx/SiO2 (Phillips) Ethylene Polymerization Catalyst. *Journal of Physical Chemistry B*, **2001**, 105, 3073-3078	3.4	62
290	CO/Rh(111): Vibrational frequency shifts and lateral interactions in adsorbate layers. *Journal of Chemical Physics*, **2001**, 115, 8209-8216	3.9	61
289	Relating adatom emission to improved durability of Pt□Pd diesel oxidation catalysts. *Journal of Catalysis*, **2015**, 328, 151-164	7.3	59
288	The outermost atomic layer of thin films of fluorinated polymethacrylates. *Langmuir*, **2004**, 20, 6344-51	4	58
287	The analysis of temperature programmed desorption experiments of systems with lateral interactions; implications of the compensation effect. *Surface Science*, **2003**, 546, 159-169	1.8	58
286	Basic Reaction Steps in the Sulfidation of Crystalline Tungsten Oxides. *Journal of Physical Chemistry B*, **2002**, 106, 3449-3457	3.4	58
285	The interfaces of poly(p-phenylene vinylene) and fullerene derivatives with Al, LiF, and Al/LiF studied by secondary ion mass spectroscopy and x-ray photoelectron spectroscopy: Formation of AlF3 disproved. *Journal of Chemical Physics*, **2002**, 117, 5031-5035	3.9	57
284	On the formation of cobalt□molybdenum sulfides in silica-supported hydrotreating model catalysts. *Topics in Catalysis*, **2000**, 13, 99-108	2.3	57
283	Interaction of small molecules with Au(3 1 0): Decomposition of NO. *Applied Catalysis A: General*, **2005**, 291, 93-97	5.1	56
282	Characterization of surface phases in bimetallic FeRh/SiO2 catalysts by in situ M?ssbauer spectroscopy at cryogenic temperatures. *Journal of Catalysis*, **1984**, 89, 138-149	7.3	56
281	Ostwald ripening on a planar Co/SiO2 catalyst exposed to model Fischer□Tropsch synthesis conditions. *Journal of Catalysis*, **2015**, 328, 123-129	7.3	51
280	Introducing a new surface science model for Ziegler□Natta catalysts: Preparation, basic characterization and testing. *Journal of Catalysis*, **2007**, 247, 129-136	7.3	51
279	Direct versus hydrogen-assisted CO dissociation on the Fe (100) surface: a DFT study. *ChemPhysChem*, **2012**, 13, 89-91	3.2	49
278	Olivine as tar removal catalyst in biomass gasification: Catalyst dynamics under model conditions. *Applied Catalysis B: Environmental*, **2013**, 130-131, 168-177	21.8	49
277	In situ surface oxidation study of a planar Co/SiO2/Si(100) model catalyst with nanosized cobalt crystallites under model Fischer-Tropsch synthesis conditions. *Journal of Physical Chemistry B*, **2006**, 110, 8657-64	3.4	49
276	Thermally cured low surface-tension epoxy films. *Polymer*, **2005**, 46, 10531-10537	3.9	49
275	Promoting Synergy in CoW Sulfide Hydrotreating Catalysts by Chelating Agents. *Journal of Catalysis*, **2001**, 200, 194-196	7.3	49

274	Elementary reactions of CO and H2 on C-terminated Fe5C2(0 0 1) surfaces. *Journal of Catalysis*, **2014**, 317, 158-166	7.3	48
273	Fundamental issues on practical Fischer–Tropsch catalysts: How surface science can help. *Catalysis Today*, **2014**, 228, 106-112	5.3	48
272	Ethanol Decomposition on Co(0001): C–O Bond Scission on a Close-Packed Cobalt Surface. *Journal of Physical Chemistry Letters*, **2010**, 1, 1767-1770	6.4	48
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270	Characterization and Reactivity of Pd/MgO and Pd/Al2O3 Catalysts in the Selective Hydrogenolysis of CCl2F2. *Journal of Physical Chemistry B*, **2002**, 106, 1024-1031	3.4	47
269	Mossbauer studies of ultrafine iron-containing particles on a carbon support. *Journal of Physics Condensed Matter*, **1992**, 4, 6555-6568	1.8	47
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267	Pt–Co/SiO2 Bimetallic Planar Model Catalysts for Selective Hydrogenation of Crotonaldehyde. *Journal of Physical Chemistry B*, **2004**, 108, 17905-17914	3.4	45
266	Lateral Interactions in the Dissociation Kinetics of NO on Rh(100). *Journal of Physical Chemistry B*, **2000**, 104, 3058-3066	3.4	45
265	Combining density-functional calculations with kinetic models: NO/Rh(111). *Journal of Chemical Physics*, **2003**, 118, 7081-7089	3.9	44
264	A density functional theory study on the effect of zero-point energy corrections on the methanation profile on Fe(100). *ChemPhysChem*, **2012**, 13, 1591-6	3.2	42
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259	A DFT study of the adsorption and dissociation of CO on sulfur-precovered Fe100. *Journal of Physical Chemistry B*, **2006**, 110, 13897-904	3.4	41
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257	Environmental Transmission Electron Microscopy (ETEM) Studies of Single Iron Nanoparticle Carburization in Synthesis Gas. *ACS Catalysis*, **2017**, 7, 4867-4875	13.1	40

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255	Polyethylene Formation on a Planar Surface Science Model of a Chromium Oxide Polymerization Catalyst. *Journal of Catalysis*, **1999**, 183, 1-5	7.3	40
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253	A M□ssbauer study of surface effects on iron Fischer-Tropsch catalysts. *Applications of Surface Science*, **1982**, 10, 302-313		40
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243	Formation of cobalt□holybdenum sulfides in hydrotreating catalysts: a surface science approach. *Applied Surface Science*, **1999**, 144-145, 380-384	6.7	37
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236	Reflections on the Fischer-Tropsch synthesis: Mechanistic issues from a surface science perspective. *Catalysis Today*, **2016**, 275, 100-110	5.3	35
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233	Direct catalytic route to superhydrophobic polyethylene films. *Langmuir*, **2006**, 22, 7956-9	4	34
232	Methane, formaldehyde and methanol formation pathways from carbon monoxide and hydrogen on the (0 0 1) surface of the iron carbide □Fe5C2. *Journal of Catalysis*, **2015**, 325, 9-18	7.3	33
231	Studying Fischer□Tropsch catalysts using transmission electron microscopy and model systems of nanoparticles on planar supports. *Catalysis Science and Technology*, **2011**, 1, 689	5.5	33
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226	Chemistry of O- and H-containing species on the (001) surface of anatase TiO2: a DFT study. *ChemPhysChem*, **2010**, 11, 2375-82	3.2	31
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223	Photosystem II Acts as a Spin-Controlled Electron Gate during Oxygen Formation and Evolution. *Journal of the American Chemical Society*, **2017**, 139, 16604-16608	16.4	30
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