

## List of Publications

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### Publications in Peer-Reviewed Journals

- 1) H.-P. Steinrück, A. Winkler, K. D. Rendulic  
*Angle-resolved thermal desorption spectra for CO and H<sub>2</sub> from Ni(111), Ni(110) and polycrystalline nickel*  
J. Phys. C 17 (1984) L311-L316.
- 2) H.-P. Steinrück, A. Winkler, K. D. Rendulic  
*An accurate technique to measure angle-resolved flash desorption spectra*  
Surf. Sci. 152-153 (1985) 323-327.
- 3) H.-P. Steinrück, K. D. Rendulic, A. Winkler  
*The sticking coefficient of H<sub>2</sub> on Ni(111) as a function of particle energy and angle of incidence: A test of detailed balancing*  
Surf. Sci. 154 (1985) 99-108.
- 4) H.-P. Steinrück, M. Luger, A. Winkler, K. D. Rendulic  
*Adsorption probabilities of H<sub>2</sub> and D<sub>2</sub> on various flat and stepped nickel surfaces*  
Phys. Rev. B 32 (1985) 5032-5037.
- 5) H. Karner, M. Luger, H.-P. Steinrück, A. Winkler, K. D. Rendulic  
*Features of hydrogen adsorption on a Ni(997) surface*  
Surf. Sci. Lett. 163 (1985) L641-L644.
- 6) H.-P. Steinrück and K. D. Rendulic  
*A test of capillary array beam sources for very large Knudsen numbers*  
Vacuum 36 (1986) 213-215.
- 7) H.-P. Steinrück, M. P. D'Evelyn, R. J. Madix  
*The role of defects in the dissociative adsorption of CO on Ni(100)*  
Surf. Sci. Lett. 172 (1986) L561-L567.
- 8) H.-P. Steinrück, A. V. Hamza, R. J. Madix  
*A molecular beam investigation on the kinetic energy dependence of the activation of ethane on the reconstructed Ir(110)-(1x2) surface*  
Surf. Sci. Lett. 173 (1986) L571-L575.
- 9) A. V. Hamza, H.-P. Steinrück, R. J. Madix  
*Activation of n-butane with translational energy on Ir(110)-(1x2)*  
J. Chem. Phys. 85 (1986) 7494-7495.
- 10) M. P. D'Evelyn, H.-P. Steinrück, R. J. Madix  
*Precursors and trapping in the molecular chemisorption of CO on Ni(100)*  
Surf. Sci. 180 (1987) 47-76.
- 11) A. V. Hamza, H.-P. Steinrück, R. J. Madix  
*The dynamics of the dissociative adsorption of alkanes on Ir(110)*  
J. Chem. Phys. 86 (1987) 6506-6514.

- 12) H.-P. Steinrück and R. J. Madix  
*The interaction of CO and Ar molecular beams with Ir(110)*  
Surf. Sci. 185 (1987) 36-52.
- 13) K. D. Rendulic, A. Winkler, H.-P. Steinrück  
*The role of surface defects in the adsorption and desorption of hydrogen on Ni(111)*  
Surf. Sci. 185 (1987) 469-478.
- 14) A. V. Hamza, H. P. Steinrück, R. J. Madix  
*The dynamics of alkane activation on Ni(100) and Ir(110)*  
J. Vac. Sci. Technol. A 5 (1987) 520-521.
- 15) D. Coulman, A. Puschmann, W. Wurth, H.-P. Steinrück, D. Menzel  
*Highly efficient dissociation of condensed and adsorbed water via core-to-bound excitation*  
Chem. Phys. Lett. 148 (1988) 371-376.
- 16) H.-P. Steinrück, C. Schneider, P. A. Heimann, T. Pache, E. Umbach, D. Menzel  
*Electronic structure and orientation of NO on Ni(111) studied by ARUPS using synchrotron radiation*  
Surf. Sci. 208 (1989) 136-154.
- 17) P. A. Heimann, P. Jakob, T. Pache, H.-P. Steinrück, D. Menzel  
*Benzene coadsorbed with CO and NO on Ru(001): I. A UPS study with synchrotron radiation*  
Surf. Sci. 210 (1989) 282-300.
- 18) W. Huber, H.-P. Steinrück, T. Pache, D. Menzel  
*The electronic structure and molecular symmetry of pure benzene and benzene coadsorbed with CO on Ni(111)*  
Surf. Sci. 217 (1989) 103-126.
- 19) H.-P. Steinrück, W. Huber, T. Pache, D. Menzel  
*The adsorption of benzene mono- and multilayers on Ni(111) studied by TPD and LEED*  
Surf. Sci. 218 (1989) 293-316.
- 20) T. Pache, H.-P. Steinrück, W. Huber, D. Menzel  
*The adsorption of H<sub>2</sub>O on clean and oxygen precovered Ni(111) studied by ARUPS and TPD*  
Surf. Sci. 224 (1989) 195-214.
- 21) H.-P. Steinrück, P. Heimann, W. Huber, P. Jakob, T. Pache, D. Menzel  
*Electronic structure, orientation and symmetry of benzene and benzene coadsorbed with CO and NO on Ni(111) and Ru(001)*  
J. Electron Spectrosc. Relat. Phenom. 52 (1990) 91-102.
- 22) H.-P. Steinrück, T. Pache, W. Huber  
*A low coverage study of NO on Ni(111) by angle resolved Auger electron spectroscopy at resonant excitation*  
Phys. Scr. 41 (1990) 177-180.
- 23) C. Schneider, H.-P. Steinrück, T. Pache, P. A. Heimann, D. J. Coulman, E. Umbach, D. Menzel  
*A comparative study of the electronic structure of CO, CO + K, NO and NO + K on Ni(111) by ARUPS using synchrotron radiation*  
Vacuum 41 (1990) 730-731.
- 24) D. Coulman, A. Puschmann, U. Höfer, H.-P. Steinrück, W. Wurth, P. Feulner, D. Menzel  
*Excitation, deexcitation, and fragmentation in the core region of condensed and adsorbed water*  
J. Chem. Phys. 93 (1990) 58-75.

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- 25) W. Huber, P. Zebisch, T. Bornemann, H.-P. Steinrück  
*Electronic structure of cyclohexane on Ni(111)*  
Surf. Sci. 239 (1990) 353-362.
- 26) P. Zebisch, W. Huber, H.-P. Steinrück  
*Changes in the adsorption and desorption behavior of cyclohexane and benzene on Ni(111) induced by a monoatomic potassium layer*  
Surf. Sci. 244 (1991) 185-196.
- 27) W. Huber, M. Weinelt, P. Zebisch, H.-P. Steinrück  
*Azimuthal reorientation of adsorbed molecules induced by lateral interactions: benzene/Ni(110)*  
Surf. Sci. 253 (1991) 72-98.
- 28) T. Bornemann, H.-P. Steinrück, W. Huber, K. Eberle, M. Glanz, D. Menzel  
*The adsorption of H<sub>2</sub>O on K precovered Ni(111) studied by ARUPS and TPD*  
Surf. Sci. 254 (1991) 105-118.
- 29) J. Eiding, W. Domcke, W. Huber, H.-P. Steinrück  
*Jahn-Teller effect of the 2e<sub>2g</sub> level of chemisorbed benzene*  
Chem. Phys. Lett. 180 (1991) 133-138.  
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Surf. Sci. 258 (1991) 1-15.
- 31) W. Huber, P. Zebisch, T. Bornemann, H.-P. Steinrück  
*Lateral interactions and azimuthal orientation of pure and coadsorbed benzene layers on Ni(111)*  
Surf. Sci. 258 (1991) 16-22.
- 32) D. Menzel, G. Rocker, H.-P. Steinrück, D. Coulman, P. A. Heimann, W. Huber, P. Zebisch, D. R. Lloyd  
*Core excitation, decay, and fragmentation in solid benzene as studied by x-ray absorption, resonant Auger, and photon stimulated desorption*  
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- 35) M. Weinelt, P. Zebisch, H.-P. Steinrück  
*A multimethod-investigation of the adsorption of ethylene oxide on Ni(110)*  
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*Resonant excitation and decay of core holes in condensed layers of furan and pyrrole*  
J. Chem. Phys. 99 (1993) 3343-3352.
- 37) M. Weinelt, P. Zebisch, H.-P. Steinrück  
*Ethylene oxide on Pt(110)1x2. A multimethod investigation*  
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- 38) P. Zebisch, M. Weinelt, H.-P. Steinrück  
*Sulphur dioxide adsorption on the Ni(110) surface*  
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- 39) H.-P. Steinrück  
*Angle-resolved UV-photoelectron spectroscopy*  
Vacuum 45 (1994) 715-731.  
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- 40) M. Zharnikov, D. Mehl, M. Weinelt, P. Zebisch, H.-P. Steinrück  
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- 41) M. Zharnikov, D. Mehl, M. Weinelt, P. Zebisch, H.-P. Steinrück  
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- 42) M. Zharnikov, D. Mehl, H.-P. Steinrück  
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- 43) H.-P. Steinrück  
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- 44) M. Zharnikov, M. Weinelt, P. Zebisch, M. Stichler, H.-P. Steinrück  
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- 45) P. Ulbricht, O. D. Häberlen, M. Weinelt, H.-P. Steinrück, N. Rösch  
*The photoelectron spectrum of ethylene oxide adsorbed at metal surfaces: a density functional model cluster study of C<sub>2</sub>H<sub>4</sub>O/Ni(110)*  
Surf. Sci. 326 (1995) 53-58.
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*The adsorption of acetylene on Ni(110): An experimental and theoretical study*  
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*Argon desorption as a tool to study the growth of molecular layers*  
Surf. Sci. 348 (1996) 370-378.
- 52) M. Zharnikov, M. Weinelt, P. Zebisch, H.-P. Steinrück  
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- 53) H.-P. Steinrück  
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- 54) P. Zebisch, M. Stichler, P. Trischberger, M. Weinelt, H.-P. Steinrück  
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- 55) F. Maier, S. Kneitz, H. Koschel, H.-P. Steinrück  
*A simple design for a helium scattering apparatus*  
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*REELS measurements on a CdTe(100) surface*  
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*Electronic structure of benzene adsorbed on single domain Si(001)-(2x1): A combined experimental and theoretical study*  
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- 72) S. Kneitz, J. Gemeinhardt, H.-P. Steinrück  
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- 75) H. Dröge, M. Nagelstraßer, J. Nürnberger, W. Faschinger, A. Fleszar, H.-P. Steinrück  
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Surf. Sci. 475 (2001) 18-36.
- 78) Th. Gleim, C. Heske, E. Umbach, C. Schumacher, W. Faschinger, Ch. Ammon, M. Probst, H.-P. Steinrück  
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*In-situ core-level photoelectron spectroscopy of adsorbates on surfaces involving a molecular beam - general setup and first experiments*  
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*Temperature dependent oxidation of thin Ni layers on Cu(111)*  
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- 420) L. Winter, S. Trzeciak, C. C. Fernández, S. Massicot, T. Talwar, F. Maier, D. Zahn, H.-P. Steinrück  
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*Surface science and liquid phase investigations of oxanorbornadiene/oxaquadricyclane ester derivatives as molecular solar thermal energy storage systems on Pt(111)*  
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*Adsorption and Thermal Evolution of [C<sub>1</sub>C<sub>1</sub>Im][Tf<sub>2</sub>N] on Pt(111)*  
Phys. Chem. Chem. Phys. 25 (2023) 27953-27966.
- 423) M. Wang, G. Wang, C. Naisa, Y. Fu, S. M. Gali, S. Paasch, M. Wang, H. Wittkämper, C. Papp, E. Brunner, S. Zhou, D. Beljonne, H.-P. Steinrück, R. Dong, X. Fen  
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- 428) E. M. Freiburger, J. Steffen, N. J. Waleska-Wellenhofer, F. Hemauer, V. Schwaab, A. Görling, H.-P. Steinrück, C. Papp  
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- 432) M. Moritz, S. Maisel, N. Raman, H. Wittkämper, C. Wichmann, M. Grabau, D. Kahraman, J. Steffen, N. Taccardi, A. Görling, M. Haumann, P. Wasserscheid, H.-P. Steinrück, C. Papp  
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ACS Catal. 14 (2024) 6440-6450.
- 433) D. Hemmeter, A. Gezmis, D. Kremitzl, P. Wasserscheid, F. Maier, H.-P. Steinrück  
*Tailoring the Surface Enrichment of a Pt Catalyst in Ionic Liquid Solutions by Choice of the Solvent*  
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- 437) C. Wichmann, M. Moritz, H. Wittkämper, T.-E. Hsieh, J. Frisch, M. Bär, H.-P. Steinrück, C. Papp  
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- 438) S. Khan Antara, D. Hemmeter, Z. Zhai, D. Kremitzl, F. Maier, T. M. Koller, H.-P. Steinrück, M. Haumann  
*Hydrogenation with dissolved Pt-complexes homogenously distributed in the ionic liquid or enriched at the gas/ionic liquid interface*  
ChemCatChem (2024) e202400574 (accepted).
- 439) A. Wolfram, M. Muth, J. Köbl, S. Mehl, N. Tsud, H.-P. Steinrück, B. Meyer, O. Lytken  
*Phenylphosphonic acid on rutile TiO<sub>2</sub> (110): Using DFT-predicted O 1s spectra to identify the adsorption binding mode*  
J. Phys. Chem. C (accepted).
- 440) A. Wolfram, M. Muth, F. J. Williams, S. Mehl, N. Tsud, H.-P. Steinrück, Ole Lytken  
*Adsorption of phenylboronic acid derivatives on rutile TiO<sub>2</sub> (110)*  
J. Phys. Chem. C (accepted).

## List of Publications

### Prof. Dr. Hans-Peter Steinrück

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### Book Chapters & Other Publications (not ISI Web-of-Knowledge listed)

- B1) M. Luger, A. Winkler, K. D. Rendulic, H.-P. Steinrück  
*Temperature dependence of the sticking coefficient for H<sub>2</sub> on various nickel surfaces*  
Proc. Symposium on Surface Science, 3S'85, Eds. G. Betz, H. Störi, W. Husinsky and P. Varga, (Obertraun 1985) p.107-112.
- B2) H.-P. Steinrück, K. D. Rendulic, A. Winkler  
*An experimental investigation of detailed balancing for the systems H<sub>2</sub>/nickel and CO/nickel*  
Proc. Symposium on Surface Science, 3S'85, Eds. G. Betz, H. Störi, W. Husinsky and P. Varga, Obertraun 1985, pp.101-106.
- B3) H.-P. Steinrück  
*Das Prinzip der Detaillierten Gleichgewichte im System H<sub>2</sub>/Nickel und CO/Nickel*  
Mitteilungsblatt der Österreichischen Physikalischen Gesellschaft 4/1986, Dezember 1986.
- B4) H.-P. Steinrück  
*Angle resolved UV-photoelectron spectroscopy of adsorbed molecules*  
INVITED contribution to Proc. Symposium on Surface Science, 3S'91, Eds. P. Varga, G. Betz, Obertraun 1991, pp. 67-74.
- B5) M. Weinelt, P. Zebisch, W. Huber, M. Pabst, U. Birkenheuer, B. Reichert, N. Rösch, H.-P. Steinrück  
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Proc. Symposium on Surface Science, 3S'92, Eds. M. Alnot, J. J. Ehrhardt, C. Launois, B. Mutaftschiev, M. R. Tempère, La Plagne/Savoie 1992, pp. 276-279.
- B6) H.-P. Steinrück  
*Angle-resolved UV-photoelectron spectroscopy*  
"Surface Science Techniques", Eds. J. M. Walls and R. Smith, Pergamon (1994) 67-83.  
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- B7) D. Mehl, M. Zharnikov, P. Zebisch, M. Weinelt, H.-P. Steinrück  
*Photoelectron diffraction and holography of clean metal surfaces*  
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- B8) R. Girwidz, J. Schmidt, H.-P. Steinrück  
*Geometrische Optik am Computer*  
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- B9) R. Girwidz, O. Gößwein, H.-P. Steinrück  
*Atomphysik am Computer*  
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- B10) J. F. Zhu, M. Kinne, T. Fuhrmann, B. Tränkenschuh, R. Denecke, H.-P. Steinrück  
*Coadsorption of NO and CO on a Pt(111) surface studied by high-resolution synchrotron radiation photoemission*  
Chapter in: "Surface Science: New Research", Editor: Charles P. Norris, pp. 217-235, 2005 Nova Science Publishers, Inc.  
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- B11) G. Held and H.-P. Steinrück  
*Cyclic hydrocarbons*  
Landolt-Börnstein "Physics of Covered Solid Surfaces - Adsorbed Layers on Surfaces", Editor: H. P. Bonzel, Vol. III/42, Subvolume A4, Chapter 3.8.7. (2005) pp. 300-369.  
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[DOI: 10.1007/b12050 \(Volume\)](https://doi.org/10.1007/b12050)  
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[DOI: 10.1007/10932216\\_12 \(Tables\)](https://doi.org/10.1007/10932216_12)  
[DOI: 10.1007/10932216\\_13 \(Figures\)](https://doi.org/10.1007/10932216_13)
- B12) W. Zhao, C. Papp, H.-P. Steinrück  
*Heterographenes*  
Encyclopedia of Polymeric Nanomaterials, Springer (2015) 924-936.  
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[DOI: 10.1007/978-3-642-29648-2\\_340](https://doi.org/10.1007/978-3-642-29648-2_340)
- B13) R. Denecke and H.-P. Steinrück  
*Adsorption of (Small) Molecules on Metals*  
Chapter 38 in: "Surface and Interface Science", Vol. 5, Editor: K. Wandelt, pp. 391-458, 2016 Wiley-VCH.  
ISBN: 978-3-527-41158-0
- B14) Hans-Peter Steinrück, Florian Maier, Christian Papp  
*Molecules in Energy Storage and Release – A Surface Science Perspective*  
Bunsenmagazin 25 (2023) 112-117.



## List of Publications

**Prof. Dr. Hans-Peter Steinrück**

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### Academic Theses

- T1) H.-P. Steinrück  
Diplomarbeit (Diploma Thesis):  
*Die experimentelle Bestimmung der Winkelverteilung desorbierender Moleküle*  
Technische Universität Graz, 1983.
- T2) H.-P. Steinrück  
Doktorarbeit (PhD Thesis):  
*Das Prinzip der Detaillierten Gleichgewichte im System  $H_2$ /Nickel und CO/Nickel*  
Technische Universität Graz, 1985.
- T3) H.-P. Steinrück  
Habilitationsschrift (Habilitation Thesis):  
*Elektronische Struktur, Symmetrie und laterale Wechselwirkung adsorbierter Moleküle*  
Technische Universität München, 1992.