

Peter Sigmund
Part-time Lecturer
Department of Physics, Chemistry and Pharmacy
Campusvej 55
5230, Odense M
Denmark
E-mail: sigmund@sdu.dk
Phone: 65503522
Fax: 66158780
Website:
http://www.sdu.dk/Om_SDU/Institutter_centre/lfk_fysik_og_kemi/Forskning/Forskningsgrupper/Peter_Sigmund.aspx?sc_lang=en

Journal articles

Limitations of the friction model of low-energy electronic stopping

Sigmund, P. & Schinner, A., 1. Jan 2023, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 534, p. 39-44

Dansk Fysisk Selskab fylder 50 år

Sigmund, P., 1. Oct 2022, In: Kvant - Tidsskrift for fysik og Astronomi. 33, 3, p. 16-20

Electronic stopping below 10 keV/u

Sigmund, P., Schinner, A. & Shulga, V. I., 2021, *Proceedings of the XXV International Conference ISI-2021*. Moscow, p. 19-25

Threshold behavior and isotope effect in low-energy electronic stopping of light ions

Schinner, A., Shulga, V. I. & Sigmund, P., 2021, In: Journal of Applied Physics. 129, 18, 11 p., 185304.

Height and position of the Bragg peak in the stopping of charged particles

Sigmund, P. & Schinner, A., Apr 2020, In: Journal of Applied Physics. 127, 7 p., 164302.

Effect of impact-parameter-dependent electronic energy loss on reflected-ion spectra

Shulga, V. I., Schinner, A. & Sigmund, P., 15. Mar 2020, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 467, p. 91-96 18 p.

The Bloch correction, key to heavy-ion stopping

Sigmund, P. & Schinner, A., 2020, In: Journal of Applied Physics. 128, 10, 11 p., 100903.

Expanded Pass stopping code

Schinner, A. & Sigmund, P., 1. Dec 2019, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 460, p. 19-26 8 p.

Reciprocity analysis of electronic stopping of slow ions

Sigmund, P., Kuzmin, V. & Schinner, A., 1. Dec 2019, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 460, p. 10-18 9 p.

Is electronic stopping of ions velocity-proportional in the velocity-proportional regime?

Sigmund, P. & Schinner, A., 2019, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 440, p. 41-47

Electronic stopping in oxides beyond Bragg additivity

Sigmund, P. & Schinner, A., 2018, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 415, p. 110-116

Six decades of atomic collisions in solids

Sigmund, P., 1. Sept 2017, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 406, Part B, p. 391-412 22 p.

Note on measuring electronic stopping of slow ions

Sigmund, P. & Schinner, A., 2017, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 410, p. 78-87

Progress in Understanding Heavy-Ion Stopping

Sigmund, P. & Schinner, A., 2016, In: Nuclear Instruments & Methods in Physics Research. Section B: Beam Interactions with Materials and Atoms. 382, p. 15-25

Systematics of charge-exchange straggling

Sigmund, P. & Schinner, A., 2016.

Systematics of Heavy-Ion Charge-Exchange Straggling

Sigmund, P. & Schinner, A., 2016, In: Nuclear Instruments & Methods in Physics Research. Section B: Beam Interactions with Materials and Atoms. 384, p. 30-36

Velocity dependence of heavy-ion stopping below the maximum

Sigmund, P. & Schinner, A., 2015, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 342, 1, p. 292-299 8 p.

Notes on Barkas-Andersen effect

Sigmund, P. & Schinner, A., 1. Oct 2014, In: The European Physical Journal D: Atomic, Molecular, Optical and Plasma Physics. 68, 10, p. 318-325 8 p., d140461.

Particle penetration and radiation effects. Volume 2: Penetration of atomic and molecular ions

Sigmund, P., 30. Jun 2014, Springer Science+Business Media. 603 p. (Springer Series in Solid State Sciences).

Anatomy of charge-exchange straggling

Sigmund, P., Osmani, O. & Schinner, A., 2014, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 338, p. 101-107 7 p.

Bohrs første hit i 1913

Sigmund, P., Mar 2013, In: Aktuel Naturvidenskab. p. 14-17

Elements of Sputtering Theory

Sigmund, P., 2013, *Nanofabrication by Ion-Beam Sputtering : Fundamentals and applications*. Som, T. & Kanjilal, D. (eds.). Singapore: Pan Stanford Publishing, p. 1-40

Energy-loss straggling of 2-10 MeV/u Kr ions in gases

Sigmund, P., Vockenhuber, C., Jensen, J., Julin, J., Kettunen, H., Laitinen, M., Rossi, M., Sajavara, T., Osmani, O., Schinner, A. & Whitlow, H. J., 2013, In: The European Physical Journal D: Atomic, Molecular, Optical and Plasma Physics. 67, 145, p. 1-9

Hans Henrik Andersen: 1. May 1937 – 3. November 2012

Sigmund, P., 2013, In: AIP Conference Proceedings. 1525, 2 p.

ICACS25. An Anniversary

Sigmund, P., 2013, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 315, p. 6-8

Erratum: Polarization wake of penetrating ions: Oscillator model (European Physical Journal D (2012) 66 (56))

Schinner, A. & Sigmund, P., 2012, In: European Physical Journal D. 66, 280.

Polarization wake of penetrating ions: Oscillator model

Sigmund, P. & Schinner, A., 2012, In: The European Physical Journal D: Atomic, Molecular, Optical and Plasma Physics. 66, 56, p. 1-11 11 p.

Recollections of fifty years with sputtering

Sigmund, P., 2012, In: Thin Solid Films. 520, p. 6031-6049 19 p.

Good and bad scientific practice

Sigmund, P., 3. May 2011, 9 p..

Charge Evolution of Swift-Heavy-Ion Beams Explored by matrix method

Osmani, O. & Sigmund, P., 2011, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 269, p. 813-816 4 p.

Charge-Exchange Straggling in Equilibrium

Sigmund, P., Osmani, O. & Schinner, A., 2011, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 269, p. 804-809 6 p.

Exploring Reciprocity as a Tool in Low-Energy Electronic Stopping

Kuzmin, V. & Sigmund, P., 2011, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 269, p. 817-823 7 p.

Stopping of swift hydrogen diclusters: Oscillator model

Sigmund, P. & Schinner, A., 2011, In: The European Physical Journal D: Atomic, Molecular, Optical and Plasma Physics. 61, p. 39-50 12 p.

Impact-parameter-dependent stopping of swift ions: III. Bunching and packing in energy-loss straggling

Sigmund, P. & Schinner, A., 2010, In: European Physical Journal D : Atomic, Molecular and Optical Physics. 58, p. 105-116

Impact-parameter-dependent stopping of swift ions: Bunching and Packing in energy Loss Straggling

Sigmund, P. & Schinner, A., 2010, In: European Physical Journal D : Atomic, Molecular and Optical Physics. 58, p. 105-116

Evaluation by citation: An imperfect system

Sigmund, P. & Wallin, J. A., 1. Dec 2009, In: Physics Today. 62, 12, p. 10-11 2 p.

Errata and Addenda for ICRU Report 73, Stopping of ions heavier than helium

Sigmund, P., Schinner, A. & Paul, H., 2009, In: Journal of the ICRU. 5, 1, 10 p.

Impact-parameter-dependent electronic stopping of swift ions: 1. Binary theory

Sigmund, P. & Schinner, A., 2009, In: European Physical Journal D : Atomic, Molecular and Optical Physics. 56, p. 41-50 10 p.

Impact-parameter-dependent stopping of swift ions: 2. Application to channeling

Sigmund, P. & Schinner, A., 2009, In: European Physical Journal D : Atomic, Molecular and Optical Physics. 56, p. 51-60 10 p.

Stopping of ions heavier than helium. Erratum

Sigmund, P., Paul, H. & Schinner, A., 2009

Niels Bohr og UVVU

Sigmund, P., 8. Dec 2008, In: *Aktuel Naturvidenskab*. 6, p. 42-43 2 p.

Stopping of slow ions

Sigmund, P., May 2008, In: *Bulletin of the Russian Academy of Sciences - Physics*. 72, 5, p. 569-578

Antiproton and proton energy loss straggling at keV energies

Sigmund, P., Møller, S. P., Csete, A., Ichioka, T., Knudsen, H., Kristense, H. P. E., Uggerhøj, U. I., Andersen, H. H. & Schinner, A., 2008, In: *European Physical Journal D : Atomic, Molecular and Optical Physics*. 46, p. 89-92 4 p.

Erratum

Glazov, L. G. & Sigmund, P., 2008, In: *Nuclear Instruments and Methods B*.

Erratum to: "Energy-loss spectra of light relativistic ions" [Nucl. Instr. and Meth. B 256 (2007) 50]

(DOI:10.1016/j.nimb.2006.11.118)

Glazov, L. G. & Sigmund, P., 2008, In: *Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms*. 266, 23, p. 5067 1 p.

Reciprocity in the electronic stopping of slow ions in matter

Sigmund, P., 2008, In: *European Physical Journal D : Atomic, Molecular and Optical Physics*. 47, p. 45-54 10 p.

Stopping of slow ions

Sigmund, P., 2008, In: *Bulletin of the Russian Academy of Sciences - Physics*. 72, 5, p. 569-578

Electron ejection in collisions between swift heavy ions

Sigmund, P. & Schinner, A., 2007, In: *Nuclear Instruments and Methods in Physics Research B*. 258, p. 116-120 5 p.

Energy-loss spectra of light relativistic ions

Sigmund, P. & Glazov, L. G., 2007, In: *Nuclear Instruments and Methods in Physics Research B*. 256, p. 50-56 7 p.

Ionization of neon by intermediate energy carbon ions

Sigmund, P., McLawhorn, S. L., Toburen, L. H., Shinpaugh, J. L., Justiniano, E. L. B., Dingfelder, M., Tokesi, K., Sulik, B., Schinner, A., Reinhold, C. O. & Schulz, D. R., 2007. 1 p.

Particle penetration and radiation effects: General aspects and stopping of swift point charges

Sigmund, P., 2007, Springer Science+Business Media. 437 p. (Springer Series in Solid state Science, Vol. 151).

Stopping of ions based on semiclassical phase shifts

Sigmund, P. & Arista, N. R., 2007, In: *Physical Review A. Atomic, Molecular, and Optical Physics*. 76, 062902, p. 1-11 11 p.

Z₂ structure and gas-solid effect in the stopping of slow ions

Sigmund, P. & Schinner, A., 2007, In: *Nuclear Instruments and Methods in Physics Research B*. 263, p. 349-356 8 p.

Bibliometri som forskningsindikator?

Wallin, J. A. & Sigmund, P., 2006, Syddansk Universitet, p. 1-4, 4 p.

Erratum: Binary stopping theory for swift heavy ions (European Physical Journal D (2000) 12 (425-434))

Sigmund, P. & Schinner, A., 2006, In: *European Physical Journal D*. 37, 1, p. 155 1 p.

Ion Beam Science: Solved and Unsolved Problems. Part I

Sigmund, P., 2006, 375 p. (Matematisk-Fysiske Meddelelser, Vol. 52).

Ion Beam Science: Solved and Unsolved Problems. Part II

Sigmund, P., 2006, 379 p. (Matematisk-Fysiske Meddelelser, Vol. 52).

Primary electron spectra from swift heavy-ion impact: Scaling relations and estimates from modified Bohr theory

Weng, M. S., Schinner, A., Sharma, A. & Sigmund, P., 2006, In: European Physical Journal D : Atomic, Molecular and Optical Physics. 39, p. 209-221

Publish or Perish

Sigmund, P., 2006, In: Weekendavisen. Ideer, p. 1, 8

Shell correction in stopping theory

Sigmund, P. & Schinner, A., 2006, In: Nuclear Instruments and Methods in Physics Research B. 243, p. 457-460

Stopping of high-Z ions at intermediate velocities

Fettouhi, A., Geissel, H., Schinner, A. & Sigmund, P., 2006, In: Nuclear Instruments and Methods in Physics Research B. 245, p. 22-27

Stopping of swift ions: Solved and unsolved problems

Sigmund, P., 2006, In: Matematisk-Fysiske Meddelelser. 52, p. 557-593

Stopping of swift ions: Solved and unsolved problems

Sigmund, P., 2006, *Ion Beam Science: Solved and Unsolved Problems, Pts 1 and 2.*

Valence structure effects in the stopping of swift ions

Sigmund, P., Sharma, A., Schinner, A. & Fettouhi, A., 1. Apr 2005, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 230, 1-4, p. 1-6 6 p.

International evaluation of Risø National Laboratory

Sigmund, P., Torell, L., Neeff, H. J., Rathmann, S., Hanna, D. C., Jensen, K. F. & al, E., 2005, Ministeriet for Videnskab, Teknologi og Udvikling. 68 p.

Interplay of Classical and Quantum Mechanics in the Theory of Charged-Particle Stopping

Sigmund, P., 2005, *Advances in Quantum Chemistry*. Sabin, J. R. (ed.). Academic Press, p. 91-110 (Advances in Quantum Chemistry, Vol. 48).

Interplay of classical and quantum mechanics in the theory of charge-particle stopping

Sigmund, P., 2005, In: Journal of Advanced Quantum Chemistry. 48, p. 91-110

Stopping of ions heavier than helium

Sigmund, P., Bimbot, R., Geissel, H., Paul, H. & Schinner, A., 2005, 254 p. (ICRU Report, J ICRU; No. 73).

Valence structure effects in the stopping of swift ions

Sigmund, P., Sharma, A., Schinner, A. & Fettouhi, A., 2005, In: Nuclear Instruments and Methods in Physics Research B. 230, p. 1-6

Concluding remarks

Sigmund, P., 2004, *Stopping of Heavy Ions: a Theoretical Approach.*

Electronic stopping of dressed ions

Sigmund, P., 2004, *Stopping of Heavy Ions: a Theoretical Approach.* Springer, p. 45-58

General considerations

Sigmund, P., 2004, *Stopping of Heavy Ions: a Theoretical Approach*. Springer, p. 19-28

Low-velocity electronic stopping

Sigmund, P., 2004, *Stopping of Heavy Ions: a Theoretical Approach*. Springer, p. 65-76

Stopping of heavy ions: A theoretical approach

Sigmund, P., 2004, Springer. 146 p.

Stopping of Heavy Ions.

Sigmund, P., 2004, Berlin: Springer Science+Business Media.

Stopping of swift ions in compounds.

Sharma, A., Fettouhi, A., Schinner, A. & Sigmund, P., 2004, In: Nuclear Instruments and Methods in Physics Research B. 218, p. 19-28

Survey of current theoretical schemes

Sigmund, P., 2004, *Stopping of Heavy Ions: a Theoretical Approach*. Springer, p. 77-84

Anatomy of the Barkas effect

Sigmund, P. & Schinner, A., 2003, In: Nuclear Instruments and Methods in Physics Research B. 212, p. 110-117

Barkas effect, shell correction, screening and correlation in collisional energy-loss straggling of an ion beam

Sigmund, P. & Schinner, A., 2003, In: European Physical Journal D : Atomic, Molecular and Optical Physics. 23, p. 201-209

Binary theory of electronic stopping, a powerful update to Bohr's classic from 1913

Sigmund, P. & Schinner, A., 2003. 4 p.

Bohr did not make an elementary blunder

Sigmund, P., 2003, In: Radiation Effects and Defects in Solids. 158, p. 551-2

Interplay of charge exchange and projectile excitation in the stopping of swift heavy ions

Sigmund, P. & Glazov, L. G., 2003, In: European Physical Journal D : Atomic, Molecular and Optical Physics. 23, p. 211-5

Material dependence of electronic stopping

Sigmund, P., Fettouhi, A. & Schinner, A., 2003, In: Nuclear Instruments and Methods in Physics Research B. 209, p. 19-25

Nuclear stopping in transmission experiments

Glazov, L. G. & Sigmund, P., 2003, In: Nuclear Instruments and Methods in Physics Research B. 207, p. 240-256

Stopping of heavy ions: A topical issue

Andersen, H. H. & Sigmund, P., 1. Jan 2002, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 195, 1-2, p. 1-2 2 p.

Binary theory of electronic stopping

Sigmund, P. & Schinner, A., 2002, In: Nuclear Instruments and Methods in Physics Research B. 195, p. 64-90 27 p.

Binary theory of light-ion stopping

Sigmund, P. & Schinner, A., 2002, In: Nuclear Instruments and Methods in Physics Research B. 193, p. 49-55

Panel discussion on stopping of heavy ions

Baurichter, A., Sigmund, P. & Sørensen, A. H., 2002, In: Nuclear Instruments and Methods in Physics Research B. 195, p. 224-31

Statistics of heavy-ion stopping

Glazov, L. G., Sigmund, P. & Schinner, A., 2002, In: Nuclear Instruments and Methods in Physics Research B. 195, p. 183-7

Stopping of heavy ions - stop01

Sigmund, P. (ed.) & Andersen, H. H., 2002, Pergamon Press. 232 p. (Nucl. Instrum. Methods B, Vol. 195).

Binary theory of antiproton stopping

Sigmund, P. & Schinner, A., 2001, In: European Physical Journal D : Atomic, Molecular and Optical Physics. 15, p. 165-172 8 p.

Effective Charge and related/unrelated Quantities in Heavy-Ion Stopping

Sigmund, P. & Schinner, A., 2001, In: Nuclear Instruments and Methods in Physics Research B. 174, p. 535-40

Heavy-ion stopping: Bohr theory revisited

Sigmund, P. & Schinner, A., 2001, *Fundamental and applied aspects of modern physics*. World Scientific, p. 178-187 10 p.

Niels Bohrs teori for alpha-partiklers nedbremsning i et moderne perspektiv

Sigmund, P., 2001, In: Kvant. 12, p. 13-21

Nonperturbative theory of charge-dependent heavy-ion stopping

Sigmund, P. & Schinner, A., 2001, In: Phys Scr. T92, p. 222-4

Resolution of the Frozen-Charge Paradox in Stopping of Channeled Heavy Ions

Sigmund, P. & Schinner, A., 2001, In: Physical Review Letters. 86, p. 1486-9

Binary stopping theory for swift heavy ions

Sigmund, P. & Schinner, A., 1. Dec 2000, In: European Physical Journal D. 13, 3, p. 425-434

Energy-loss spectra of charged particles in the presence of charge exchange: addendum on ${}^6\text{Li}$ spectra

Glazov, L. & Sigmund, P., Sept 2000, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 170, 1-2, p. 39-44

General expression for the width of a charged-particle track

Sigmund, P., Apr 2000, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 164, p. 401-407 7 p.

Proceedings of the Eighteenth International Conference on Atomic Collisions in Solids, Odense, Denmark, 3-8 August 1999

Ellegaard, O., Møller, S. P., Schou, J. & Sigmund, P., Apr 2000, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 164-165, p. vii-viii

Pronounced composition gradients in alloys under low-energy ion implantation at high fluence

Sigmund, P. & Glazov, L. G., 1. Jan 2000, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 164, p. 453-459 7 p.

Electronic stopping of swift lithium and carbon ions

Paul, H., Schinner, A. & Sigmund, P., 2000, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 164-165, p. 212-219

Electronic stopping of swift partially stripped molecules and clusters

Jensen, J. & Sigmund, P., 2000, In: Physical Review A - Atomic, Molecular, and Optical Physics. 61, 3, 14 p., 032903.

Polarization effect in stopping of swift partially screened heavy ions: Perturbative theory

Schinner, A. & Sigmund, P., 2000, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 164-165, p. 220-229

Shell correction in Bohr stopping theory

Sigmund, P., 2000, In: European Physical Journal D : Atomic, Molecular and Optical Physics. 12, 1, p. 111-116

Stopping Power: Wrong Terminology

Sigmund, P., 2000, In: ICRU News. 2000, p. 5-7 3 p.

Interaction of Particles and Radiation with Matter

Sigmund, P., 1999, In: Nuclear Instruments and Methods in Physics Research B. 155, p. 337-8

Analysis of a 'perfect' sputter experiment

Glazov, L. G., Shulga, V. I. & Sigmund, P., 21. Dec 1998, In: Surface and Interface Analysis. 26, 7, p. 512-517 6 p.

Energy loss and charge exchange: Statistics and atomistics

Sigmund, P. & Glazov, L., Mar 1998, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 136-138, p. 47-54

Erratum to: "Statistical theory of charged-particle stopping and straggling in the presence of charge exchange" [Nucl. Instr. and Meth. B 69 (1992) 113]

Sigmund, P., Mar 1998, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 134, 3-4, p. 435 1 p.

Stopping power in perspective

Sigmund, P., Feb 1998, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 135, 1-4, p. 1-15

Compositional changes in alloys during ion bombardment at elevated temperatures

Sckerl, M. W., Lam, N. Q. & Sigmund, P., 1998, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 140, 1-2, p. 75-90

Effect of composition gradients in alloys on differential sputter parameters

Vicanek, M., Sckerl, M. W. & Sigmund, P., 1998, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 140, 1-2, p. 61-69

Fifteen ways to get your audience to leave you

Sigmund, P., 1998, In: Physics Today. 51, 8, p. 86

Jens Lindhard - Obituary

Andersen, J. U. & Sigmund, P., 1998, In: Physics Today. 51, 9, p. 89

Oleg Borisovich Firsov - Obituary

Chibisov, M., Martynenko, Y., Sigmund, P. & Yurasova, V., 1998, In: Physics Today. 51, 10, p. 104

Charge-dependent electronic stopping of swift nonrelativistic heavy ions

Sigmund, P., Nov 1997, In: Physical Review A (Atomic, Molecular and Optical Physics). 56, 5, p. 3781-3793

Energy-loss spectra of charged particles in the presence of charge exchange

Glazov, L. & Sigmund, P., Apr 1997, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 125, 1-4, p. 110-115

Forces on swift ions near plane surfaces

Sigmund, P., Apr 1997, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 125, 1-4, p. 77-96

Forholdet mellem forskning og undervisning

Sigmund, P., 1997, *Imod en ny videnskabelig dannelse: Sider af universitetets undervisning og kultur*. Mai, A-M., Glerup, J., Dahler-Larsen, P. & Ørsted, B. (eds.). Odense: Syddansk Universitetsforlag, p. 128-141

Gottfried Karl Wehner - Obituary

Betz, G. & Sigmund, P., 1997, In: Physics Today. 50, 4, p. 81

Low-speed limit of Bohr's stopping-power formula

Sigmund, P., Oct 1996, In: Physical Review A - Atomic, Molecular, and Optical Physics. 54, 4, p. 3113-3117

Statistics of projectile states and correlated phenomena for penetrating ions

Sigmund, P., Jul 1996, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 115, 1-4, p. 111-124

Molecule and cluster bombardment: Energy loss, trajectories, and collision cascades

Sigmund, P., Bitensky, I. S. & Jensen, J., 2. May 1996, In: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 112, 1-4, p. 1-11

Analysis of the primary process in isotope sputtering

Shulga, V. I. & Sigmund, P., 1996, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 119, 3, p. 359-374

Ion-beam induced compositional changes in alloys at elevated temperatures

Sckerl, M. W., Sigmund, P. & Lam, N. Q., 1996, In: Nuclear Instruments and Methods in Physics Research B. 120, 1-4, p. 221-225

Nonlinear transmission sputtering

Bitensky, I. S. & Sigmund, P., 1996, In: Nuclear Instruments and Methods in Physics Research B. 112, 1-4, p. 12-15

Om foredrag: om at forberede og holde et videnskabeligt foredrag

Sigmund, P., 1996, Kbh.: Teknisk Forlag. 74 p.

Particle fluxes in atomic collision cascades

Sckerl, M. W., Sigmund, P. & Vicanek, M., 1996, 64 p. (Matematisk-Fysiske Meddelelser; No. 3, Vol. 44).

Charge-Exchange and Energy-Loss Statistics of Swift Penetrating Ions

Sigmund, P. & Närmann, A., Jun 1995, In: Laser and Particle Beams. 13, 2, p. 281-292

Note on stopping power and statistics of particle penetration

Sigmund, P., Apr 1995, In: Nuclear Inst. and Methods in Physics Research, B. 95, 4, p. 477-479

Exact solutions of balance equation governing ion-beam-induced composition changes and sputtering

Sigmund, P., 1995, In: Applied Physics Letters. 66, 4, 433.

Introduction to the physics of heavy-ion tracks

Sigmund, P., 1995

Momentum in atomic collision cascades

Sckerl, M. W., Vicanek, M. & Sigmund, P., 1995, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 102, 1-4, p. 86-92

Simulation of energy-dependent isotope sputtering

Shulga, V. I. & Sigmund, P., 1995, In: Nuclear Inst. and Methods in Physics Research, B. 103, 3, p. 383-386

Orientational dependence of electronic stopping of molecule and cluster ions

Jensen, J., Mikkelsen, H. H. & Sigmund, P., 3. Apr 1994, In: Nuclear Inst. and Methods in Physics Research, B. 88, 1-2, p. 191-195 5 p.

Light-ion stopping near the maximum

Sigmund, P., 2. Mar 1994, In: Nuclear Inst. and Methods in Physics Research, B. 85, 1-4, p. 541-550

Analysis of charge-dependent stopping of swift ions

Sigmund, P., 1. Jan 1994, In: Physical Review A. 50, 4, p. 3197-3201 5 p.

Statistics of energy loss and charge exchange of penetrating particles: Higher moments and transients

Närmann, A. & Sigmund, P., 1. Jan 1994, In: Physical Review A. 49, 6, p. 4709-4715

Atomic collisions on solid surfaces: E.S. Parilis, L.M. Kishinevsky, N.Yu. Turaev, B.E. Baklitzky, F.F. Umarov, V.Kh. Verleger, S.L. Nizhnaya and I.S. Bitensky (North-Holland, Amsterdam, 1993) pp. XIII + 664, hard cover, US\$ 309.50, Dfl. 495.-, ISBN 0-444-89105-6

Sigmund, P., 1994, In: Nuclear Instruments and Methods in Physics Research B. 93, 3, p. 382-383

Scattering of swift diatomic molecular ions from planar surfaces at grazing incidence

Shulga, V. I. & Sigmund, P., 1994, In: Nuclear Inst. and Methods in Physics Research, B. 88, 1-2, p. 97-106

Alloy and isotope sputtering

Sigmund, P. & Lam, N. Q., 1993, *Fundamental Processes in Sputtering of Atoms and Molecules*.

Alloy and Isotope Sputtering

Sigmund, P. & Lam, N. Q., 1993, In: Matematisk-Fysiske Meddelelser. 43, p. 255-349

Alloy sputtering at high fluence: preferential sputtering and competing effects

Sigmund, P. & Oliva, A., 1993, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 82, 2, p. 269-282

Fundamental processes in sputtering of atoms and molecules

Sigmund, P., 1993, Munksgaard . 675 p.

Introduction to sputtering

Sigmund, P., 1993, *Fundamental Processes in Sputtering of Atoms and Molecules*.

Momentum asymmetry and the isotope puzzle in sputtering by ion bombardment

Sigmund, P. & Sckerl, M. W., 1993, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 82, 2, p. 242-254

Note on isotope sputtering

Sigmund, P., 1993, In: Nuclear Inst. and Methods in Physics Research, B. 82, 1, p. 192-193

Particle-Induced Electron Emission: Open Questions, Pitfalls, and a Few Attempts at Answers

Sigmund, P., 1993, *Ionization of Solids by Heavy Particles*. Baragiola, R. A. (ed.). Springer, p. 59-78 (N A T O Advanced Science Institutes Series B: Physics, Vol. 306).

Preface

Andersen, H. H. & Sigmund, P., 1993, In: Nuclear Inst. and Methods in Physics Research, B. 82, 2, p. 5

Statistical theory of charged-particle stopping and straggling in the presence of charge exchange

Sigmund, P., 1. Jun 1992, In: Nuclear Inst. and Methods in Physics Research, B. 69, 1, p. 113-122

Intercomparison of atomic models for computing stopping parameters from the Bethe theory: Atomic hydrogen

Mikkelsen, H. H., Meibom, A. & Sigmund, P., 1. Jan 1992, In: Physical Review A. 46, 11, p. 7012-7018

Editorial

Andersen, H. H. & Sigmund, P., 1992, In: Nuclear Inst. and Methods in Physics Research, B. 69, 1, p. 5

Pressure relaxation in atomic mixing and preferential sputtering

Collins, R. & Sigmund, P., 1992, In: Journal of Applied Physics. 72, 5, 1993.

Scaling laws governing the multiple scattering of diatomic molecules under Coulomb explosion

Sigmund, P., 1992, In: Physical Review A. 46, 5, 2596.

Scattering and stopping of swift diatomic molecules under coulomb explosion

Sigmund, P., 1992, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 67, 1-4, p. 11-16

Impact parameter dependence of light-ion electronic energy loss

Mortensen, E. H., Mikkelsen, H. H. & Sigmund, P., 1. Jan 1991, In: Nuclear Inst. and Methods in Physics Research, B. 61, 2, p. 139-148 10 p.

Accelerated deuterons in cluster-fusion experiments

Hautala, M., Pan, Z. & Sigmund, P., 1991, In: Physical Review A. 44, 11, 7428.

Interaction of slow (100 eV/atom) copper clusters with thin gold films: reflection, transmission, and sputtering at normal and oblique incidence

Shulga, V. I. & Sigmund, P., 1991, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 62, 1, p. 23-34

Statistics of Charged-Particle Penetration

Sigmund, P., 1991, *Interaction of Charged Particles with Solids and Surfaces*. Gras-Marti, A., Urbassek, H. M., Arista, N. R. & Flores, F. (eds.). Boston: Springer, p. 73-144 (N A T O Advanced Science Institutes Series B: Physics, Vol. 271).

Barkas effect in a dense medium: Stopping power and wake field

Esbensen, H. & Sigmund, P., Jul 1990, In: Annals of Physics. 201, 1, p. 152-192

Penetration of slow gold clusters through silicon

Shulga, V. I. & Sigmund, P., May 1990, In: Nuclear Inst. and Methods in Physics Research, B. 47, 3, p. 236-242

Stopping power and energy loss spectrum of a dense medium of bound electrons

Belkacem, A. & Sigmund, P., Mar 1990, In: Nuclear Instruments & Methods in Physics Research. Section B: Beam Interactions with Materials and Atoms. 48, p. 29-33

Interaction of slow (100 eV/atom) carbon clusters with gold: Penetration properties and collision cascades

Pan, Z. & Sigmund, P., 1990, In: Nuclear Inst. and Methods in Physics Research, B. 51, 4, p. 344-353

The Z³I contribution to the stopping power of protons and antiprotons in silicon: Two theoretical predictions

Mikkelsen, H. H., Esbensen, H. K. & Sigmund, P., 1990, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 48, 1-4, p. 8-9

Depth of origin and angular spectrum of sputtered atoms

Vicanek, M., Rodriguez, J. J. J. & Sigmund, P., Feb 1989, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 36, 2, p. 124-136

Round Robin computer simulation of ejection probability in sputtering

Sigmund, P., Robinson, M. T., Baskes, M. I., Hautala, M., Cui, F. Z., Eckstein, W., Yamamura, Y., Hosaka, S., Ishitani, T., Shulga, V. I., Harrison, D. E., Chakarov, I. R., Karpuzov, D. S., Kawatoh, E., Shimizu, R., Valkealahti, S., Nieminen, R. M., Betz, G., Husinsky, W., Shapiro, M. H., & 2 others Vicanek, M. & Urbassek, H. M., Feb 1989, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 36, 2, p. 110-123

Barkas effect in electronic stopping power: Rigorous evaluation for the harmonic oscillator

Mikkelsen, H. H. & Sigmund, P., 1. Jan 1989, In: Physical Review A. 40, 1, p. 101-116

COLLISION CASCADES AND SPUTTERING INDUCED BY LARGER CLUSTER IONS

Sigmund, P., 1989, In: Journal de Physique Archives. 50, C2, p. C2-175-C2-182

Interplay between computer simulation and transport theory in the analysis of ion-beam-induced collision processes in solids

Sigmund, P., 1989, In: Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films. 7, 3, 585.

Pronounced nonlinear behavior of atomic collision sequences induced by keV-energy heavy ions in solids and molecules

Shulga, V. I., Vicanek, M. & Sigmund, P., 1989, In: Physical Review A. 39, 7, 3360.

Inelastic background signal in x-ray photoelectron spectroscopy

Sigmund, P., Dec 1988, In: Physical Review B. 38, 16, 11140.

Preferential recoil implantation in polyatomic targets

Sigmund, P., Jul 1988, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 34, 1, p. 15-21

Mechanisms and theory of physical sputtering by particle impact

Sigmund, P., 2. Jun 1987, In: Nuclear Inst. and Methods in Physics Research, B. 27, 1, p. 1-20

Impact parameter dependence of electronic energy loss: Oscillator model

Mikkelsen, H. H. & Sigmund, P., Jun 1987, In: Nuclear Inst. and Methods in Physics Research, B. 27, 2, p. 266-275

Collision cascades as fractals

Winterbon, K. B., Urbassek, H. M., Sigmund, P. & Gras-Marti, A., 1987, In: Physica Scripta. 36, 4, 689.

Erratum: Bethe stopping theory for a harmonic oscillator and Bohr's oscillator model of atomic stopping (Physical Review A (1987) 35, 9 (3965))

Sigmund, P. & Haagerup, U., 1987, In: Physical Review A. 35, 9, p. 3965

Magnitude and mechanism of collisional mixing

Johannessen, K. & Sigmund, P., 1987, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 19-20, Part 1, p. 85-91

Elastic and inelastic scattering of electrons emitted from solids: effects on energy spectra and depth profiling in xps/aes
Tofterup, A. L., Tougaard, S. & Sigmund, P., Jul 1986, In: Surface and Interface Analysis. 9, 2, p. 130

A note on rotational and vibrational motion of sputtered or desorbed diatomic molecules

Sigmund, P., Urbassek, H. M. & Matragrano, D., Apr 1986, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 14, 4-6, p. 495-499

Bethe stopping theory for a harmonic oscillator and Bohrs oscillator model of atomic stopping

Sigmund, P. & Haagerup, U., 1. Jan 1986, In: Physical Review A. 34, 2, p. 892-910

Preferential sputtering from isotopic mixtures and alloys of near-neighbor elements

Sigmund, P., 1986, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. 18, 1-6, p. 375-387

Energy loss spectrum of swift charged particles penetrating a layer of material

Sigmund, P. & Winterbon, K. B., Aug 1985, In: Nuclear Inst. and Methods in Physics Research, B. 12, 1, p. 1-16

On the proton stopping power maximum in gases and vapours

Sabin, J. R., Oddershede, J. & Sigmund, P., Aug 1985, In: Nuclear Inst. and Methods in Physics Research, B. 12, 1, p. 80-83

Stopping power at intermediate velocities

Sigmund, P., 15. May 1985, In: Nuclear Inst. and Methods in Physics Research, B. 10-11, PART 1, p. 241-246

Higher moments of the energy loss spectrum of swift charged particles penetrating a thin layer of material

Sigmund, P. & Johannessen, K., Feb 1985, In: Nuclear Inst. and Methods in Physics Research, B. 6, 3, p. 486-495

A Time-Dependent Analog of the Ritz Variational Principle in Nonrelativistic Quantum Mechanics

Sigmund, P. & Basbas, G., 1985, In: Physica Scripta. 32, 5, 482.

CORRECTION

Sigmund, P., 1985, In: Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms.

Recoil numbers, particle densities and reaction yields in linear atomic collision cascades

Huang, W., Urbassek, H. M. & Sigmund, P., 1985, In: Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties. 52, 6, p. 753-785

Tracks of heavy ions in muscovite mica: Analysis of the rate of production of radiation defects

Dartyge, E. & Sigmund, P., 1985, In: Physical Review B. 32, 8, 5429.

A note on evaporation from heated spikes

Urbassek, M. & Sigmund, P., 1984, In: Applied Physics A. 35, 1, p. 19-25

CORRECTION: Temperature-dependent sputtering of metals and insulators

Sigmund, P., 1984, In: Applied Physics A. 34, p. 247

Fundamentals of sputtering

Sigmund, P., 1984

Surface studies by sputtering

Sigmund, P., 1984, *Trends in physics : Proceedings of the 6th General Conference of the European Physical Society*. Janta, J. & Pantoflicek, J. (eds.). PRAGUE -CZECHOSLOVAKIA: European Physical Society, p. 459-464

Temperature-dependent sputtering of metals and insulators

Sigmund, P. & Szymonski, M., 1984, In: *Applied Physics A*. 33, p. 141–152

CITATION CLASSIC - THEORY OF SPUTTERING .1. SPUTTERING YIELD OF AMORPHOUS AND POLYCRYSTALLINE TARGETS

Sigmund, P., 14. Mar 1983, In: *Current Contents Physical Chemical and Earth Sciences*. 11, p. 18

Predicted Z² structure and gas-solid difference in low-velocity stopping power of light ions

Oddershede, J., Sabin, J. R. & Sigmund, P., 1. Jan 1983, In: *Physical Review Letters*. 51, 15, p. 1332-1335

Mechanism of ion beam induced mixing of layered solids

Sigmund, P., Jan 1983, In: *Applied Physics A*. 30, p. 43–46

Fourth International Workshop on Inelastic Ion–Surface Collisions

Sigmund, P., 1983, In: *Physica Scripta*. 1883, 3, p. T6

LSS and the Integral Equations of Transport Theory

Sigmund, P., 1983, In: *Physica Scripta*. 28, 3, p. 257-267

Energy loss straggling of a point charge penetrating a free-electron gas

Sigmund, P. & Fu, D. J., 1. Jan 1982, In: *Physical Review A*. 25, 3, p. 1450-1455

Kinetic theory of particle stopping in a medium with internal motion

Sigmund, P., 1. Jan 1982, In: *Physical Review A*. 26, 5, p. 2497-2517

CORRECTION

Sigmund, P., 1982, In: *Nuclear Instruments & Methods in Physics Research*.

Influence of elastic and inelastic scattering on energy spectra of electrons emitted from solids

Tougaard, S. & Sigmund, P., 1982, In: *Physical Review B*. 27, 7, 4452.

Sputtering of multicomponent materials: Elements of a theory

Sigmund, P., Oliva, A. & Falcone, G., 1982, In: *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*. 194, 1-3, p. 541-548

Stopping of slow recoil atoms in gases

Falcone, G., Grasmarti, A., Sigmund, P., Smend, F., Ahlert, J., Schumacher, M., Rullhusen, P. & Ziegeler, L., Jun 1981, In: *Zeitschrift für Physik A Hadrons and nuclei*. 301, p. 101–107

Comment on the energy distribution of excited recoil atoms

Sigmund, P., 1981

Depth of origin of sputtered atoms

Falcone, G. & Sigmund, P., 1981, In: *Applied Physics*. 25, p. 307–310

Distortion of depth profiles during ion bombardment II. Mixing mechanisms

Grasmarti, A. & Sigmund, P., 1981, In: *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*. 180, 1, p. 211-219

Electron Emission from Solids During Ion Bombardment: Theoretical Aspects

Sigmund, P. & Tougaard, S. M., 1981, *Inelastic Particle-Surface Collisions: Proceedings of the Third International Workshop on Inelastic Ion-Surface Collisions Feldkirchen-Westerham, Fed. Rep. of Germany September 17–19, 1980*. Taglauer, E. & Heiland, W. (eds.). Berlin: Springer, p. 2-37 (Springer Series in Chemical Physics, Vol. 17).

Erratum: Recoil implantation and ion-beam-induced composition changes in alloys and compounds (Journal of Applied Physics (1979) 50 (7261))

Sigmund, P., 1981, In: *Journal of Applied Physics*. 52, 7, p. 4890

Generalised scaling law for electronically elastic ion-molecule collisions in the sudden approximation

Sigmund, P., 1981, In: *Journal of Physics B: Atomic and Molecular Physics*. 14, 9, p. L321-L323

Sputtering by ion bombardment: theoretical concepts

Sigmund, P., 1981, *Sputtering by Particle Bombardment I: Physical Sputtering of Single-Element Solids*. Behrisch, R. (ed.). Berlin: Springer, p. 9-71 (Topics in Applied Physics, Vol. 47).

Sputtering from elastic-collision spikes in heavy-ion-bombarded metals

Sigmund, P. & Claussen, C., 1981, In: *Journal of Applied Physics*. 52, 2, p. 990-993

Theoretical aspects of atomic mixing by ion beams

Sigmund, P. & Grasmart, A., 1981, In: *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*. 182-183, Part 1, p. 25-41

Distortion of depth profiles during sputtering. I. General description of collisional mixing

Sigmund, P. & Gras-Marti, A., 1980, In: *Nuclear Instruments and Methods*. 168, 1-3, p. 389-394

Secondary Electron Spectra from Dielectric Theory

Brice, D. K. & Sigmund, P., 1980, In: *Matematisk-Fysiske Meddelelser*. 40, p. 1-34

Sputtering of single and multiple component materials

Sigmund, P., 1980, In: *Journal of vacuum science & technology*. 17, 396, p. 396-399

Direct and recoil-induced electron emission from ion-bombarded solids

Holmén, G., Svensson, B., Schou, J. & Sigmund, P., 1979, In: *Physical Review B*. 20, 6, p. 2247-2254

Fysik 1

Sigmund, P., 1979, Odense: Odense Universitet. 202 p.

Recoil implantation and ion-beam-induced composition changes in alloys and compounds

Sigmund, P., 1979, In: *Journal of Applied Physics*. 50, 11, p. 7261-7263

Statistics of Particle Penetration in Molecular Gases and Noncrystalline Solids "Radiation Research

Sigmund, P., 1979, In: *Radiation Research*. 1979, p. 110-120

Erratum: Scaling law for electronically elastic ion - Molecule collisions in the sudden approximation (Journal of Physics B: Atomic and Molecular Physics (1978) 11 (L145-L148))

Sigmund, P., 1978, In: *Journal of Physics B: Atomic and Molecular Physics*. 11, 15, p. 2779 1 p.

Scaling law for electronically elastic ion-molecule collisions in the sudden approximation

Sigmund, P., 1978, In: *Journal of Physics B: Atomic and Molecular Physics*. 11, 5, p. L145-L148

Small-angle multiple scattering of ions in the screened-coulomb region. III. Combined angular and lateral spread

Sigmund, P., Heinemeier, J., Besenbacher, F., Hvelplund, P. & Knudsen, H., 1978, In: Nuclear Instruments and Methods. 150, 2, p. 221-231

Statistics of Particle Penetration

Sigmund, P., 1978, In: Matematisk-Fysiske Meddelelser. 40, p. 1-36

CLASSICAL SCATTERING OF CHARGED-PARTICLES BY MOLECULES, SINGLE AND MULTIPLE COLLISIONS AT SMALL ANGLES

Sigmund, P., 1977, In: Matematisk-Fysiske Meddelelser.

Comment on Biological Effect of Elastic Nuclear Collisions

Sigmund, P. & Johnson, R. E., 1977, In: Radiation Research. 71, 3, p. 481-492

Energy loss and angular spread of ions traversing matter

Sigmund, P., 1977, *Atomic Physics in Nuclear Experiments: Annals of the Israel Physical Society*. Rosner, B. & Kalish, R. (eds.). København: Israel Physical Society, Vol. 1.. p. 69-120

Sputtering Processes: Collision Cascades and Spikes

Sigmund, P., 1977, *Inelastic Ion-Surface Collisions*. Tolk, N. H., Heiland, W., Tully, J. C. & White, C. W. (eds.). Academic Press, p. 121-152

Total backscattering of keV light ions from solid targets in single-collision approximation

Vukanić, J. & Sigmund, P., 1. Nov 1976, In: Applied Physics. 11, 3, p. 265-272 8 p.

Energy loss of charged particles to molecular gas targets

Sigmund, P., 1. Jan 1976, In: Physical Review A. 14, 3, p. 996-1005

Damage clusters in molecular-ion-bombarded gold observed by transmission electron microscopy

Ruault, M. O., Chaumont, J., Bernas, H. & Sigmund, P., 1976, In: Physical Review Letters. 36, 19, p. 1148-1151

Effect of molecular geometry on multiple scattering of heavy energetic particles

Sidenius, G., Andersen, N., Sigmund, P., Besenbacher, F., Heinemeier, J., Hvelplund, P. & Knudsen, H., 1976, In: Nuclear Instruments and Methods. 134, 3, p. 597-599

Lateral distributions of multiply scattered ions: sensitivity to atomic interaction, Z1-oscillations, molecular effects, double-differential distributions, and implications for surface scattering

Andersen, N., Sigmund, P., Heinemeier, J., Hvelplund, P., Knudsen, H. & Sidenius, G., 1976, In: Nuclear Instruments and Methods. 132, p. 703-705

CORRECTION

Sigmund, P., 1975, In: Nuclear Instruments and Methods.

Energy dissipation by random collisions in compound target materials

Andersen, N. & Sigmund, P., 1975, *Atomic Collisions in Solids*. Datz, S., Appleton, B. R. & Moak, C. D. (eds.). Springer, Vol. 1. p. 115-123

Energy Loss and Ranges of Charged Particles in Matter

Sigmund, P., 1975, *Radiation Research: Biomedical, Chemical and Physical Perspectives documents the proceedings of the Fifth International Congress of Radiation Research held in Seattle, Washington*. Nygaard, O. F., Sinclair, W. K. & Adler, H. I. (eds.). Academic Press, p. 278-286

Energy Loss of Charged Particles in Solids

Sigmund, P., 1975, *Radiation Damage Processes in Materials*. Dupuy, C. H. S. (ed.). Leiden: Springer, p. 3-117 (Nato Science Series E., Vol. 1).

Erratum: Energy density and time constant of heavy-ion-induced elastic-collision spikes in solids (Applied Physics Letters (1974) 25 (169))

Sigmund, P., 1975, In: Applied Physics Letters. 27, 1, p. 52

Momentum deposition by heavy-ion bombardment and an application to sputtering

Littmark, U. & Sigmund, P., 1975, In: Journal of Physics D: Applied Physics. 8, 3, p. 241-245

Small-angle multiple scattering of ions in the screened Coulomb region: 2. Lateral spread

Marwick, A. D. & Sigmund, P., 1975, In: Nuclear Instruments and Methods. 126, 3, p. 317-323

Energy dissipation by heavy ions in compound targets

Sigmund, P. & Andersen, N., 1974, *Matematisk+Fysiske Meddelelser udgivet af de Kongelige Danske Videnskabernes Selskab*. København, Vol. 39-3. p. 1+45 45 p.

Inversion of total cross sections for repulsive ion-atom scattering in the classical regime

Sigmund, P. & Lillemark, U., 1974, In: PHYSICA. 71, 1, p. 258-265

Small-angle multiple scattering of ions in the screened Coulomb region: I. Angular distributions

Sigmund, P. & Winterbon, K. B., 1974, In: Nuclear Instruments and Methods. 119, p. 541-557

Sputtering of chemisorbed gas (nitrogen on tungsten) by low-energy ions

Winters, H. F. & Sigmund, P., 1974, In: Journal of Applied Physics. 45, 11, p. 4760-4766

A mechanism of surface micro-roughening by ion bombardment

Sigmund, P., 1973, In: Journal of Materials Science. 8, 11, p. 1545-1553

BROAD-BAND OPTICAL RADIATION FROM LOW-ENERGY ION-METAL COLLISIONS

Tolk, N. H., White, C. W. & Sigmund, P., 1973, In: Bulletin of the American Physical Society.

Sputtering and backscattering of keV light ions bombarding random targets

Weissman, R. & Sigmund, P., 1973, In: Radiation Effects. 19, 1, p. 7-14

Collision theory of displacement damage. IV. Ion range and sputtering

Sigmund, P., 1972, In: Revue Roumaine De Physique. 17, 8, p. 969-1000

Deduction of heavy-ion x-ray production cross sections from thick-target yields

Taulbjerg, K. & Sigmund, P., 1972, In: Physical Review A. 5, 3, p. 1285-1289

Erratum: Deduction of heavy-ion x-ray production cross sections from thick-target yields (Physical Review A)

Taulbjerg, K. & Sigmund, P., 1972, In: Physical Review A. 6, 3, p. 1257

Selected aspects of ion scattering, energy deposition, and sputtering

Sigmund, P., 1972, *Physics of ionized gases, 1972; proceedings of invited lectures given at the VI Yugoslav Symposium and Summer School on the Physics of Ionized Gases, Miljevac by Split, Yugoslavia, July 16-21, 1972*. Kurepa, M. (ed.). Beograd, Institute of Physics, p. 137-195

Energy deposition and penetration depth of heavy ions in the electronic stopping region

Sigmund, P., Matthies, M. T. & Phillips, D. L., 1971, In: Radiation Effects. 11, 1, p. 39-49

ION IMPLANTATION

Davidson, S. M., Booker, G. R., Bicknell, R. W., Allen, R. M., Hart, R. R., Marsden, D. A., Whitton, J. L., Masters, B. J., Fairfield, J. M., Crowder, B. L., Title, R. S., Brice, D. K., Westmoreland, J. E. & Sigmund, P., 1971.

Correlation functions in the theory of atomic collision cascades: Ion location and the distribution in depth and size of damage clusters

Westmoreland, J. E. & Sigmund, P., 1970, In: Radiation Effects. 6, 2, p. 187-197

Spatial distribution of energy deposited by atomic particles in elastic collisions

Sigmund, P., Winterbon, K. B. & Sanders, J. B., 1970, *Matematisk+Fysiske Meddelelser udgivet af det Kongelige Danske Videnskabernes Selskab*. København, Vol. 37-14. p. 1+73

A note on integral equations of the Kinchin-Pease type

Sigmund, P., 1969, In: Radiation Effects. 1, 1, p. 15-18

Erratum: Theory of sputtering. I. Sputtering yield of amorphous and polycrystalline targets (Physical Review (1969) 187, 2, (768))

Sigmund, P., 1969, In: Physical Review. 187, 2, p. 768

ON NUMBER OF ATOMS DISPLACED BY IMPLANTED IONS OR ENERGETIC RECOIL ATOMS

Sigmund, P., 1969, In: Applied Physics Letters. 14, 3, p. 114-117

The Energy Dependence of Lattice Disorder in Ion-Implanted Silicon

Marsden, D. A., BellavanGr, Davies, J. A., Martini, M. & Sigmund, P., 1969, In: Physica Status Solidi (B) Basic Research. 35, 1, p. 269-275

Theory of sputtering. I. Sputtering yield of amorphous and polycrystalline targets

Sigmund, P., 1969, In: Physical Review. 184, 2, p. 383-416

Correlation Functions between Point Defects in Random Collision Cascades

Sigmund, P., 1968, In: Bulletin of the American Physical Society. 13, p. 464

Spatial distribution of defects in cascades. Black spot defects in electron irradiated copper

Sigmund, P., Scheidler, G. P. & Roth, G., 1968

Sputtering efficiency of amorphous substances

Sigmund, P., 1968, In: Canadian Journal of Physics. 46, 6, p. 731-737

SPUTTERING YIELD FOR AMORPHOUS AND POLYCRYSTALLINE TARGETS

Sigmund, P., 1968, In: Bulletin of the American Physical Society.

Possibility of anisotropic disordering of f. c. c. A3B alloys by irradiation with fast electrons

Sigmund, P., 1967, In: Physics Letters A. 24, 2, p. 104-105

Spatial distribution of energy deposited by ion bombardment

Sigmund, P. & Sanders, J. B., 1967, *Colloque International sur les Applications des Faisceaux Ioniques a la Technologie des Semiconducteurs = International Conference on Applications of Ions [sic] Beams to Semiconductor Technology*. p. 1-23

A simple nonbinary scattering model applicable to atomic collisions in crystals at low energies

Andersen, H. H. & Sigmund, P., 1966, *Matematisk-Fysiske Meddelelser udgivet af Det Kongelige Danske Videnskabernes Selskab*. København: Det Kongelige Danske Videnskabernes Selskab, p. 5-50 (Matematisk-Fysiske Meddelelser; No. 15, Vol. 34).

On the Mechanism of Sputtering

Lehmann, C. & Sigmund, P., 1966, In: IPPS physica status solidi (b). 16, 2, p. 507-511

Defect distributions in channeling experiments

Andersen, H. H. & Sigmund, P., 1965, In: Nuclear Instruments and Methods. 38, p. 238-240

Non-binary atomic collisions in crystals

Andersen, H. H. & Sigmund, P., 1965, In: Physics Letters. 15, 3, p. 237-238

CORRECTION

Sigmund, P., 1963, In: Physics Letters.

Effect of channelling on displacement cascade theory

Sigmund, P., 1963, In: Physics Letters. 6, 3, p. 251-253

Magnetismus des freien Elektronengases

Sigmund, P., 1963, In: ZEITSCHRIFT FUR PHYSIK. 171, p. 515–526

Activities

27th International Conference on Atomic Collisions in Solids

Peter Sigmund (Speaker)

24. Jul 2016 → 29. Jul 2016

Abbremsung schwerer Ionen im keV- und MeV-Bereich

Peter Sigmund (Lecturer)

9. Jan 2008

Abbremsung schwerer Ionen und die damit verbundenen Elektronenspektren

Peter Sigmund (Lecturer)

3. Apr 2007

Applications of the PASS stopping code

Peter Sigmund (Guest lecturer) & Andreas Schinner (Other)

14. Oct 2019

Atomic Collisions in Solids

Peter Sigmund (Speaker)

22. Oct 2012

Atomic Collisions in Solids

Peter Sigmund (Speaker)

23. Oct 2012

Bestyrelsen for Syddansk Folkeuniversitet (External organisation)

Peter Sigmund (Member)

1. Jan 2004 → 31. Aug 2008

Centro Atomico Bariloche

Peter Sigmund (Visiting researcher)

31. Jan 2008 → 28. Feb 2008

Charge evolution of swift-heavy-ion beams explored by matrix method

Peter Sigmund (Lecturer)

19. Jul 2010

Charge exchange in stopping and straggling of swift heavy ions

Peter Sigmund (Lecturer)

21. Sept 2011 → 23. Sept 2011

Charge exchange in stopping and straggling of swift ions

Peter Sigmund (Lecturer)

24. Oct 2010 → 28. Oct 2010

Charge states and charge exchange of penetrating ions

Peter Sigmund (Lecturer)

21. Aug 2009

Critical issues in heavy-ion stopping at low and intermediate velocities

Peter Sigmund (Lecturer)

8. Sept 2007

Danmarks Tekniske Universitet (External organisation)

Peter Sigmund (Chairman)

27. Sept 2011 → 30. Sept 2011

Electronic stopping of light and heavy ions

Peter Sigmund (Lecturer)

12. Oct 2009

En fysikers erfaringer med at holde faglige foredrag

Peter Sigmund (Lecturer)

11. Nov 2010

Energy-loss straggling in equilibrium

Peter Sigmund (Lecturer)

19. Jul 2010

Evaluering (External organisation)

Peter Sigmund (Member)

12. Sept 2011 → 14. Sept 2011

Expanded PASS stopping code

Peter Sigmund (Guest lecturer), Andreas Schinner (Guest lecturer) & Valery Kuzmin (Guest lecturer)

5. Jul 2018

Exploring reciprocity as a tool in low-energy electronic stopping

Peter Sigmund (Lecturer)

20. Jul 2010

Folkeuniversitetet i Odense (External organisation)

Peter Sigmund (Member)

1. Jan 2002 → 31. Aug 2008

Forsknings- og Innovationsministeriet (External organisation)

Peter Sigmund (Member)

30. Nov 2005 → 30. Nov 2009

From Pass to Parnass: Status and progress on a recent stopping code

Peter Sigmund (Lecturer)

4. Apr 2008

Fundamentals of ion-matter interaction

Peter Sigmund (Lecturer)

15. Aug 2011 → 19. Aug 2011

Good and bad scientific practice

Peter Sigmund (Lecturer)

26. Jun 2012

Good and bad scientific practice

Peter Sigmund (Lecturer)

28. Apr 2015

Good and bad scientific practice

Peter Sigmund (Lecturer)

10. Nov 2015

Good and bad scientific practice

Peter Sigmund (Lecturer)

12. May 2016

Good scientific practice in physics

Peter Sigmund (Lecturer)

27. Jun 2012

Hans Henrik Andersen, the scientist

Peter Sigmund (Lecturer)

8. Sept 2013

Impact-parameter-dependent stopping of heavy ions and the resolution of a longstanding problem in channeling

Peter Sigmund (Lecturer)

17. Nov 2009

Impact-parameter-dependent stopping of swift heavy ions

Peter Sigmund (Lecturer)

2. Jun 2009

International workshop on inelastic ion surface collisions

Peter Sigmund (Speaker)

20. Oct 2015

Is electronic stopping velocity-proportional in the velocity-proportional region?

Peter Sigmund (Guest lecturer)

26. Jun 2018

Journal of Applied Physics (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Journal of Physics B (Journal)

Peter Sigmund (Editor)

1. Jan 2008

Journal of Physics B (Journal)

Peter Sigmund (Editor)

1. Jan 2008

Journal of Physics D (Journal)

Peter Sigmund (Editor)

1. Jan 2008

Landmarks and Controversies in Ion Beam Physics

Peter Sigmund (Lecturer)

8. Oct 2014

Landmarks in understanding sputter emission

Peter Sigmund (Lecturer)

14. Sept 2016

Landmarks in understanding sputtering

Peter Sigmund (Guest lecturer)

20. Aug 2017

Milestones in particle stopping 1913-2013: Highlights and Dead Ends

Peter Sigmund (Lecturer)

3. Jun 2013 → 8. Jun 2013

Milestones in Particle Stopping, 1913 - 2013: Highlights and Dead Ends

Peter Sigmund (Lecturer)

5. Jun 2013

Mini-symposium on particle penetration and radiation effects

Peter Sigmund (Organizer)

17. Nov 2009

Mini-symposium on particle penetration and radiation effects

Peter Sigmund (Organizer)

29. Nov 2010

Nanoscale Pattern Formation at surfaces

Peter Sigmund (Organizer)

31. May 2013

New Journal of Physics (Journal)

Peter Sigmund (Editor)

1. Jan 2008

News on particle penetration: Molecules, wakes and Fermi gas

Peter Sigmund (Lecturer)

10. Feb 2012

Niels Bohr (1913) and the Interaction of Charged Particles with Matter

Peter Sigmund (Lecturer)

12. Jun 2013 → 14. Jun 2013

Niels Bohr (1913) and the Interaction of Charged Particles with Matter

Peter Sigmund (Lecturer)

13. Jun 2013

Niels Bohr som fysiker, stadig aktuel hundrede år efter 1913

Peter Sigmund (Lecturer)

20. Nov 2013

Nuclear Instruments and Methods B (Journal)

Peter Sigmund (Editor)

1. Jan 2008

Nuclear Instruments and Methods B (Journal)

Peter Sigmund (Editor)

1. Jan 2008

Nuclear Instruments and Methods B (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Nuclear Instruments and Methods B (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Partikelterapi - stråleterapi med hurtige ioner

Peter Sigmund (Lecturer)

28. Apr 2011 → 29. Apr 2011

Partikelterapi: Straaleterapi med hoejenergetiske ioner

Peter Sigmund (Lecturer)

9. Mar 2011

Physical Review A (Journal)

Peter Sigmund (Editor)

1. Jan 2008

Physical Review A (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Physical Review A (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Physical Review A (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Physical Review A (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Physical Review B (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Physical Review Letters (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Physical Review Letters (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Physics with Ion Beams

Peter Sigmund (Guest lecturer)

29. Mar 2019

Progress in Heavy-Ion Stopping

Peter Sigmund (Lecturer)

19. Oct 2015

Progress in understanding low-velocity electronic stopping

Peter Sigmund (Guest lecturer)

8. Nov 2021

Radiation Effects and Defects in Solids (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Reactive Sputter Deposition

Peter Sigmund (Speaker)

8. Dec 2011 → 9. Dec 2011

Recent progress in heavy-ion stopping, including channeling and straggling

Peter Sigmund (Lecturer)

25. Feb 2010

Reciprocity analysis of electronic stopping of slow ions

Peter Sigmund (Guest lecturer), Valery Kuzmin (Guest lecturer) & Andreas Schinner (Guest lecturer)

6. Jul 2018

REM8-8th International Meeting on recent developments in the study of radiation effects in matter

Peter Sigmund (Organizer)

20. Sept 2015 → 23. Sept 2015

Reports on Progress in Physics (Journal)

Peter Sigmund (Editor)

1. Jan 2009

Six decades of atomic collisions in solids: Roots, surprises, controversies

Peter Sigmund (Lecturer)

25. Jul 2016

Slowing down of swift ions and associated electron spectra

Peter Sigmund (Lecturer)

10. Jan 2008

Sputter Theory: What do we know, and what should we know?

Peter Sigmund (Lecturer)

7. Feb 2011

Stopping of heavy ions and associated electron emission spectra

Peter Sigmund (Lecturer)

15. Oct 2008

Stopping of ions

Peter Sigmund (Organizer)

4. Apr 2008

Stopping of ions heavier than helium

Peter Sigmund (Lecturer)

20. Apr 2009

Stopping of light and heavy ions: Fundamentals

Peter Sigmund (Lecturer)

18. Aug 2008

Stopping of slow ions

Peter Sigmund (Lecturer)

24. Aug 2007

Stopping of slow ions

Peter Sigmund (Lecturer)

6. Feb 2008

Stopping of slow ions revisited

Peter Sigmund (Guest lecturer)

21. Aug 2017

Stopping of swift heavy ions in gases and solids

Peter Sigmund (Lecturer)

11. Feb 2011

Stopping of swift heavy ions under channeling conditions

Peter Sigmund (Lecturer)

7. Sept 2009

Stopping of swift ions and associated electron spectra

Peter Sigmund (Lecturer)

27. Feb 2007

Stopping of swift ions and associated electron spectra

Peter Sigmund (Lecturer)

16. Jan 2007

Stopping of swift ions and related phenomena

Peter Sigmund (Lecturer)

17. Mar 2010

Stopping of swift particles, a kaleidoscope of physics problems

Peter Sigmund (Lecturer)

15. Feb 2007

Straaleterapi med højeenergetiske ioner: Partikelterapi

Peter Sigmund (Lecturer)
25. Nov 2010

Straaleterapi med højeenergetiske partikler (Partikelterapi)

Peter Sigmund (Lecturer)
24. Apr 2014

Straggling of swift ions

Peter Sigmund (Lecturer)
29. Nov 2010

Stråleterapi med højeenergetiske ioner

Peter Sigmund (Lecturer)
1. Nov 2012

Stråleterapi med højeenergetiske ioner (Partikelterapi)

Peter Sigmund (Lecturer)
28. Nov 2013

Stråleterapi med højtenergetiske partikler

Peter Sigmund (Guest lecturer)
25. Apr 2019

Stråleterapi med højtenergetiske partikler

Peter Sigmund (Guest lecturer)
25. Apr 2019

Strålingsterapi med højeenergetiske partikler

Peter Sigmund (Guest lecturer)
24. Apr 2017

Structure in the velocity dependence of heavy-ion energy-loss straggling

Peter Sigmund (Lecturer)
22. Jun 2015

Udvalgene til vurdering af videnskabelig uredelighed (External organisation)

Peter Sigmund (Member)
2010 → 31. Jan 2014

Understanding sputtering

Peter Sigmund (Guest lecturer)
1. Nov 2017

Unknown (Journal)

Peter Sigmund (Peer reviewer)
Jan 2012 → Dec 2012

Violinens fysik

Peter Sigmund (Lecturer)
2. Oct 2007

Violinens fysik

Peter Sigmund (Lecturer)

16. Jan 2008

Violinens fysik

Peter Sigmund (Lecturer)

5. Jul 2016

Z2-structure and gas-solid effect in low-velocity stopping

Peter Sigmund (Lecturer)

7. May 2007

Z2-structure and gas-solid effect in low-velocity stopping

Peter Sigmund (Lecturer)

28. Aug 2007