

Frank Lichtenberg

<https://novam-research.com>

Publications and patents

Last update 8 April 2023

Papers, presentations, and reports in novam-research.com (pdf)

91. **Searching for Room Temperature Superconductors**

Frank Lichtenberg

[https://novam-](https://novam-research.com/resources/Research_Project_Room_Temperature_Superconductors.pdf)

[research.com/resources/Research_Project_Room_Temperature_Superconductors.pdf](https://novam-research.com/resources/Research_Project_Room_Temperature_Superconductors.pdf)

At least version 48 from 2 August 2020, 165 pages, file size 6 MB pdf

90. **The tripartition of the chemical elements**

Frank Lichtenberg

<https://novam-research.com/resources/Chem-elements-and-number-3.pdf>

At least version 11 from 1 August 2020 , 87 pages , file size 2 MB pdf

89. **Presentation of entirely novel and environmentally friendly energy technologies & Funding call for their advancement**

Frank Lichtenberg

<https://novam-research.com/resources/information-document.pdf>

At least version 84 from 9 August 2020 , 59 pages , file size 1 MB pdf

88. **Report about the novel LENR-based energy technology ECAT**

Frank Lichtenberg

<https://novam-research.com/resources/ECAT.pdf>

Version from 22 November 2015 , 5 pages

87. **A study of the electro- and magnetostatic equations of the ECE Theory**

Frank Lichtenberg

https://novam-research.com/resources/Paper_on_electro-and-magnetostatic_ECE_equations.pdf

Version 10 from 22 January 2012 , 82 pages , file size 1 MB pdf

Journal articles and other publications

86. **Antiferromagnetic spin canting and magnetoelectric multipoles in h-YMnO₃**
M. Ramakrishnan, Y. Joly, Q. N. Meier, M. Fechner, M. Porer, S. Parchenko, Y. W. Windsor, E. M. Bothschafter, F. Lichtenberg, and U. Staub
Physical Review Research **5**, 013203 (1 - 9) (2023)
<https://doi.org/10.1103/PhysRevResearch.5.013203>
85. **Excitonic quenching of the oxygen-chain phonon in the photoinduced metal-to-insulator transition of photoexcited Sr_{0.95}NbO_{3.37} studied by ultraviolet-resonance Raman scattering**
Sören Buchenau, Florian Biebl, Benjamin Grimm-Lebsanft, Philipp Lenzen, Teguh C. Asmara, Andriwo Rusydi, Frank Lichtenberg, and Michael Rübhausen
Physical Review B **107**, 035149 (1 - 5) (2023)
<https://doi.org/10.1103/PhysRevB.107.035149>
84. **Presentation about a special type of electric motor which was build by third semester students of materials science during a project-based pacticum in fall semester 2022 at the ETH Zurich**
Melody Greminger, Charlotte Kalbermatten, Alessandro Marton, Laura Sironi, Ronja Wyss, Thomas Schweizer, Martin Willeke, Frank Lichtenberg, Christoph Dräyer, Christoph Maier, Maxim Vovk, Karim Bingöl, and Sascha Pucillo
Published by the ETH Zurich on 29 March 2023, 26 pages or slides (file type: ppsx type PowerPoint show, file size: 18 MB)
https://ethz.ch/content/dam/ethz/special-interest/mat/materials-theory-dam/documents/Praktikum-P2-III_HS-2022_Keppe-Motor-Projekt_Praesentation-von-Gruppe1.ppsx
83. **Webpage at the ETH Zurich about teaching for a project-based practicum and presentations from third semester students of materials science about the creation and study of a special type of electric motor:** <https://theory.mat.ethz.ch/lab/teaching-for-a-project-based-practicum-and-a-presentation-from-s.html>
82. **Melt-grown synthesis of oxide materials by the floating zone method: Presentation of a custom-made data and image recording, processing, and visualization system for a Cyberstar mirror furnace**
Frank Lichtenberg, Nicolas Guyon, Ahmed Nouri, Florian Seywert, Murielle Lescure, and Eusebio Barcelo
Published in July 2021 by the library of the ETH Zurich / ETH Research Collection via doi 10.3929/ethz-b-000493880 , 114 pages or slides
<https://doi.org/10.3929/ethz-b-000493880>

81. **Photoinduced metastable *dd*-exciton-driven metal-insulator transitions in quasi-one-dimensional transition metal oxides**
Teguh Citra Asmara, Frank Lichtenberg, Florian Biebl, Tao Zhu, Pranab Kumar Das, Muhammad Avicenna Naradipa, Angga Dito Fauzi, Caozheng Diao, Ping Yang, Philipp Lenzen, Sören Buchenau, Benjamin Grimm-Lebsanft, Dongyang Wan, Paolo E. Trevisanutto, Mark B. H. Breese, T. Venkatesan, Michael Rübhausen, Andriwo Rusydi
 Communications Physics **3**, 206 (2020)
<https://doi.org/10.1038/s42005-020-00451-w>
80. **Carpy-Galy phases $A_nB_nO_{3n+2} = ABO_x$: Overview, properties, special and hypothetical systems, and melt-grown synthesis of A- and O-deficient $n = 5$ types such as $Sr_{19}Nb_{19}WO_{66}$ and $Sr_{17}Ca_2Nb_{19}WO_{64}$ and $n = 6$ type $Ln_6Ti_4Fe_2O_{20}$ and $Ca_6Nb_5FeO_{20}$**
Frank Lichtenberg
 Published in July 2020 by the library of the ETH Zurich / ETH Research Collection
 via doi 10.3929/ethz-b-000424221 , 477 pages or slides
<https://doi.org/10.3929/ethz-b-000424221>
79. **Synthesis of melt-grown hexagonal $YMnO_3$, $YMn_{0.95}O_{2.93}$, $YMnO_{3+y}$, and $DyMnO_{3-\delta}$ and study of their properties by powder x-ray diffraction, piezoresponse force microscopy, a SQUID magnetometer, and thermogravimetry**
Frank Lichtenberg, Martin Lilienblum, Bertram Batlogg, Nicola Spaldin, Manfred Fiebig
 Published in 2019 by the library of the ETH Zurich / ETH Research Collection
 via doi 10.3929/ethz-b-000357996 , 68 pages or slides
<https://doi.org/10.3929/ethz-b-000357996>
78. **Synthesis of melt-grown crystalline $Mn_4Nb_2O_9$ (Mn^{2+} / Nb^{5+}) and $Fe_4Nb_2O_9$ (Fe^{2+} / Nb^{5+}) and study of their properties by thermogravimetry, powder x-ray diffraction, and a SQUID magnetometer**
Frank Lichtenberg
 Published in 2017 by the library of the ETH Zurich / ETH Research Collection
 via doi 10.3929/ethz-b-000220998 , 109 pages or slides
<https://doi.org/10.3929/ethz-b-000220998>
77. **Atomic-Scale Origin of the Quasi-One-Dimensional Metallic Conductivity in Strontium Niobates with Perovskite-Related Layered Structures**
Chunlin Chen, Deqiang Yin, Kazutoshi Inoue, Frank Lichtenberg, Xiuliang Ma, Yuichi Ikuhara, Johannes Georg Bednorz
 ASC Nano **11**, 12519 – 12525 (2017)
<http://dx.doi.org/10.1021/acsnano.7b06619>
76. **Global Formation of Topological Defects in the Multiferroic Hexagonal Manganites**
Q. N. Meier, M. Lilienblum, S. M. Griffin, K. Conder, E. Pomjakushina, Z. Yan, E. Bourret, D. Meier, F. Lichtenberg, E. K. H. Salje, N. A. Spaldin, M. Fiebig, A. Cano
 Physical Review X **7**, 041014 (1 – 10) (2017)
<https://doi.org/10.1103/PhysRevX.7.041014>

75. **Presentation about a laboratory for the synthesis and study of (melt-grown) oxides and related topics**
Frank Lichtenberg
Published in 2017 by the library of the ETH Zurich / ETH Research Collection
via doi 10.3929/ethz-a-010817148 , 438 pages or slides
<https://doi.org/10.3929/ethz-a-010817148>
74. **Patterning Oxide Nanopillars at the Atomic Scale by Phase Transformation**
C. Chen, Z. Wang, F. Lichtenberg, Y. Ikuhara, J. G. Bednorz
Nano Letters **15**, 6469 – 6474 (2015)
<http://dx.doi.org/10.1021/acs.nanolett.5b01847>
73. **Atomic and electronic structure of the SrNbO₃ / SrNbO_{3.4} interface**
C. Chen, S. Lv, Z. Wang, K. Akagi, Y. Ikuhara, F. Lichtenberg, J. G. Bednorz
Applied Physics Letters **105**, 221602 (1 – 5) (2014)
<http://dx.doi.org/10.1063/1.4902970>
72. **Anisotropic thermal expansion of La_n(Ti,Fe)_nO_{3n+2} (n = 5 and 6)**
A. Wölfel, P. Dorscht, F. Lichtenberg, S. van Smaalen
Acta Crystallographica Section B **69**, 137 – 144 (2013)
<http://dx.doi.org/10.1107/S2052519213003126>
71. **Two-dimensional magnetic clusters in La_n(Ti_{1-x}Fe_x)_nO_{3n+2} (n = 5 with x = 0.2 and n = 6 with x = 0.33)**
A. Wölfel, F. Lichtenberg, S. van Smaalen
Journal of Physics: Condensed Matter **25**, 076003 (5 pages) (2013)
<http://dx.doi.org/10.1088/0953-8984/25/7/076003>
70. **Spontaneous Structural Distortion and Quasi-One-Dimensional Quantum Confinement in a Single-Phase Compound**
Z. Wang, L. Gu, M. Saito, S. Tsukimot, M. Tsukada, F. Lichtenberg, Y. Ikuhara, J. G. Bednorz
Advanced Materials **25**, 218 – 222 (2013)
<http://dx.doi.org/10.1002/adma.201203134>
69. **Resistive memory switching in layered oxides: A_nB_nO_{3n+2} perovskite derivatives and Bi₂Sr₂CaCu₂O_{8+δ} high-T_c superconductor**
Y. Koval, F. Chowdhury, X. Jin, Y. Simsek, F. Lichtenberg, R. Pentcheva, P. Müller
Physica Status Solidi A **208**, 284 – 299 (2011)
<https://doi.org/10.1002/pssa.201026757>

68. **Synthesis, structural, magnetic and transport properties of perovskite-related layered titanates, niobates and tantalates of the type $A_nB_nO_{3n+2}$, $A'A_{k-1}B_kO_{3k+1}$ and $A_mB_{m-1}O_{3m}$**
F. Lichtenberg, A. Herrnberger, K. Wiedenmann
Progress in Solid State Chemistry **36**, 253 – 387 (2008)
<http://dx.doi.org/10.1016/j.progsolidstchem.2008.10.001>
67. **Superspace Description of the Crystal Structures of $Ca_n(Nb,Ti)_nO_{3n+2}$ ($n = 5$ and 6)**
J. Guevarra, A. Schönleber, S. van Smaalen, F. Lichtenberg
Acta Crystallographica Section B **63**, 183 – 189 (2007)
<https://doi.org/10.1107/S0108768107002340>
66. **Doping dependence of low-dimensional perovskite-related $(La,Ca)_{1-\gamma}TiO_{3.4\pm\delta}$**
K. Thirunavukkuarasu, F. Lichtenberg, C. A. Kuntscher
Journal of Physics: Condensed Matter **18**, 9173 – 9187 (2006)
<https://doi.org/10.1088/0953-8984/18/40/004>
65. **High-pressure infrared spectroscopy on quasi-one-dimensional metals**
C. A. Kuntscher, S. Frank, I. Loa, K. Syassen, F. Lichtenberg, T. Yamauchi, Y. Ueda
Infrared Physics & Technology **49**, 88 – 91 (2006)
<https://doi.org/10.1016/j.infrared.2006.01.022>
64. **Effect of pressure on the polarized infrared optical response of quasi-one-dimensional $LaTiO_{3.41}$**
S. Frank, C. A. Kuntscher, I. Loa, K. Syassen, F. Lichtenberg
Physical Review B **74**, 054105 (1 - 8) (2006)
<https://doi.org/10.1103/PhysRevB.74.054105>
63. **Crystal Structure of $Ca_5Nb_5O_{17}$**
J. Guevarra, S. van Smaalen, N. Rotiroti, C. Paulmann, F. Lichtenberg
Journal of Solid State Chemistry **178**, 2934 – 2941 (2005)
<https://doi.org/10.1016/j.jssc.2005.07.007>
62. **Perovskite-related $Ca(Nb,Ti)O_{3.33}$**
J. Guevarra, S. van Smaalen, P. Daniels, N. Rotiroti, F. Lichtenberg
Zeitschrift für Kristallographie - Crystalline Materials **220**, 19 – 24 (2005)
<https://doi.org/10.1524/zkri.220.1.19.58885>
61. **Anisotropy of the paramagnetic susceptibility in $LaTiO_3$: The electron-distribution picture in the ground state**
R.M. Eremina, M.V. Eremin, S. V. Iglamov, J. Hemberger, H.-A. Krug von Nidda, F. Lichtenberg, A. Loidl
Physical Review B **70**, 224428 (1 - 6) (2004)
<https://doi.org/10.1103/PhysRevB.70.224428>

60. **Electronic and vibrational properties of low-dimensional perovskites $\text{Sr}_{1-y}\text{La}_y\text{NbO}_{3.5-x}$**
C.A. Kuntscher, S. Schuppler, P. Haas, B. Gorshunov, M. Dressel, M. Grioni, F. Lichtenberg
Physical Review B **70**, 245123 (1 - 10) (2004)
<http://dx.doi.org/10.1103/PhysRevB.70.245123>
59. **Crystal structure of $\text{LaTiO}_{3.41}$ under pressure**
I. Loa, K. Syassen, X. Wang, F. Lichtenberg, M. Hanfland, C.A. Kuntscher
Physical Review B **69**, 224105 (1 - 5) (2004)
<https://doi.org/10.1103/PhysRevB.69.224105>
58. **Dielectric properties and dynamical conductivity of LaTiO_3 :
From dc to optical frequencies**
P. Lunkenheimer, T. Rudolf, J. Hemberger, A. Pimenov, S. Tachos, F. Lichtenberg, A. Loidl
Physical Review B **68**, 245108 (1 - 11) (2003)
<https://doi.org/10.1103/PhysRevB.68.245108>
57. **Transport properties of LaTiO_{3+x} films and heterostructures**
A. Schmehl, F. Lichtenberg, D.G. Schlom, H. Bielefeldt, J. Mannhart
Applied Physics Letters **82**, 3077 – 3079 (2003)
<https://doi.org/10.1063/1.1572960>
56. **Evidence for Jahn-Teller distortions at the antiferromagnetic transition in LaTiO_3**
*J. Hemberger, H.-A. Krug von Nidda, V. Fritsch, J. Deisenhofer, S. Lobina, T. Rudolf,
P. Lunkenheimer, F. Lichtenberg, A. Loidl, D. Bruns, B. Büchner*
Physical Review Letters **91**, 066403 (1 - 4) (2003)
<https://doi.org/10.1103/PhysRevLett.91.066403>
55. **Crystal and magnetic structure of LaTiO_3 : evidence for non-degenerate t_{2g} orbitals**
*M. Cwik, T. Lorenz, J. Baier, R. Müller, G. Andre, F. Bouree, F. Lichtenberg,
A. Freimuth, R. Schmitz, E. Müller-Hartmann, M. Braden*
Physical Review B **68**, 060401(R) (1 - 4) (2003)
<https://doi.org/10.1103/PhysRevB.68.060401>
54. **Magnetic and thermodynamic properties of LaTiO_3**
*J. Hemberger, V. Fritsch, H.-A. Krug von Nidda, R. Wehn,
F. Lichtenberg, A. Loidl, M.V. Eremin*
Acta Physica Polonica B **34**, 843 – 846 (2003)
<https://www.actaphys.uj.edu.pl/R/34/2/843/pdf>
53. **Perovskite-related $\text{LaTiO}_{3.41}$**
P. Daniels, F. Lichtenberg, S. van Smaalen
Acta Crystallographica Section C **59**, i15 – i17 (2003)
<https://doi.org/10.1107/S0108270102023612>

52. **Signatures of polaronic excitations in quasi-one-dimensional $\text{LaTiO}_{3.41}$**
C.A. Kuntscher, D. van der Marel, M. Dressel, F. Lichtenberg, J. Mannhart
Physical Review B **67**, 035105 (1 - 5) (2003)
<https://doi.org/10.1103/PhysRevB.67.035105>
51. **The story of Sr_2RuO_4**
F. Lichtenberg
Progress in Solid State Chemistry **30**, 103 – 131 (2002)
<http://dx.doi.org/10.1016/j.progsolidstchem.2003.07.001>
50. **The incommensurate modulation of the structure of $\text{Sr}_2\text{Nb}_2\text{O}_7$**
P. Daniels, R. Tamazyan, C.A. Kuntscher, M. Dressel, F. Lichtenberg, S. van Smaalen
Acta Crystallographica Section B **58**, 970 – 976 (2002)
<https://doi.org/10.1107/S010876810201741X>
49. **Extremely small energy gap in the quasi-one dimensional conducting chain compound $\text{SrNbO}_{3.41}$**
C.A. Kuntscher, S. Schuppler, P. Haas, B. Gorshunov, M. Dressel, M. Grioni, F. Lichtenberg, A. Herrnberger, F. Mayr, J. Mannhart
Physical Review Letters **89**, 236403 (1 - 4) (2002)
<http://dx.doi.org/10.1103/PhysRevLett.89.236403>
48. **Magnetization and specific heat of LaTiO_3**
V. Fritsch, J. Hemberger, M.V. Eremin, H.-A. Krug von Nidda, F. Lichtenberg, R. Wehn, A. Loidl
Physical Review B **65**, 212405 (1 - 4) (2002)
<https://doi.org/10.1103/PhysRevB.65.212405>
47. **Dielectric properties and charge transport in the $(\text{Sr},\text{La})\text{NbO}_{3.5-x}$ system**
V. Bobnar, P. Lunkenheimer, J. Hemberger, A. Loidl, F. Lichtenberg, J. Mannhart
Physical Review B **65**, 155115 (1 - 8) (2002)
<https://doi.org/10.1103/PhysRevB.65.155115>
46. **NMR, EPR, and bulk susceptibility measurements of one-dimensional $\text{SrNbO}_{3.41}$**
J.-E. Weber, C. Kegler, N. Büttgen, H.-A. Krug von Nidda, A. Loidl, F. Lichtenberg
Physical Review B **64**, 235414 (1 - 8) (2001)
<https://doi.org/10.1103/PhysRevB.64.235414>
45. **Metal-to-insulator transition in $\text{La}_{1-x}\text{Ba}_x\text{TiO}_3$**
V. Fritsch, J. Hemberger, M. Brando, A. Engelmayer, M. Klemm, S. Horn, G. Knebel, F. Lichtenberg, P. Mandal, F. Mayr, M. Nicklas, A. Loidl
Physical Review B **64**, 045113 (1 - 9) (2001)
<https://doi.org/10.1103/PhysRevB.64.045113>

44. **Synthesis of perovskite-related layered $A_nB_nO_{3n+2} = ABO_x$ type niobates and titanates and study of their structural, electric and magnetic properties**
F. Lichtenberg, A. Herrnberger, K. Wiedenmann, J. Mannhart
 Progress in Solid State Chemistry **29**, 1 – 70 (2001)
<http://dx.doi.org/10.1016/S0079-6786%2801%2900002-4>
43. **Untersuchung der p-Wellen-Supraleitung in Sr_2RuO_4 mittels Punktkontakt-Spektroskopie**
F. Laube, G. Goll, H. v. Löhneysen, M. Fogelström, F. Lichtenberg
 Verhandlungen der Deutschen Physikalischen Gesellschaft 4 / 2000 (Germany), p. 793
42. **Electronic spectral properties of quasi-1D $SrNbO_{3.41}$**
C.A. Kuntscher, S. Gerhold, N. Nücker, S. Schuppler, M. Grioni, F. Lichtenberg, J. Mannhart
 Verhandlungen der Deutschen Physikalischen Gesellschaft 4 / 2000 (Germany), p. 791
41. **Electronic structure of layered perovskite-related $Sr_{1-y}La_yNbO_{3.5-x}$**
C.A. Kuntscher, S. Gerhold, N. Nücker, T.R. Cummins, D.H. Lu, S. Schuppler, C.S. Gopinath, F. Lichtenberg, J. Mannhart, K. P. Bohnen
 Physical Review B **61**, 1876 – 1883 (2000)
<https://doi.org/10.1103/PhysRevB.61.1876>
40. **Spin-triplet superconductivity in Sr_2RuO_4 probed by Andreev reflection**
F. Laube, G. Goll, H. v. Löhneysen, M. Fogelström, F. Lichtenberg
 Physical Review Letters **84**, 1595 – 1598 (2000)
<https://doi.org/10.1103/PhysRevLett.84.1595>
39. **Probing superconductivity in Sr_2RuO_4 by point-contact spectroscopy**
M. Fogelström, F. Laube, G. Goll, H. v. Löhneysen, F. Lichtenberg
 Physica B: Condensed Matter **284 - 288**, 537 – 538 (2000)
<https://doi.org/10.1016/S0921-4526%2899%2902147-X>
38. **Perovskite-related layered titanates and niobates**
F. Lichtenberg, J. Mannhart, A. Herrnberger, K. Wiedenmann, C.A. Kuntscher, S. Gerhold, N. Nücker, S. Schuppler, K. P. Bohnen, A. Reller, J. Hanss
 Progress Report September 1996 – December 1999, Center for Electronic Correlations and Magnetism, Institute of Physics, University of Augsburg, Germany, p. 77–81 (2000)
37. **Point-Contact Spectroscopy on Sr_2RuO_4**
F. Laube, G. Goll, H. v. Löhneysen, F. Lichtenberg
 Journal of Low Temperature Physics **117**, 1575 – 1579 (1999)
<https://doi.org/10.1023/A:1022599229331>

36. **Die elektronische Struktur der perovskitartigen Schichtsysteme (Sr,La)NbO_{3.5-x}**
C.A. Kuntscher, S. Gerhold, N. Nücker, S. Schuppler, D.H. Lu, C.S. Gopinath, F. Lichtenberg, J. Mannhart, K.-P. Bohnen
Verhandlungen der Deutschen Physikalischen Gesellschaft 5 / 1999 (Germany), p. 950
35. **Linear-field dependence of the normal-state in-plane magnetoresistance of Sr₂RuO₄**
R. Jin, Y. Liu, F. Lichtenberg
Physical Review B **60**, 10418 – 10422 (1999)
<https://doi.org/10.1103/PhysRevB.60.10418>
34. **Normal-state magnetoresistance of Sr₂RuO₄ single crystals**
R. Jin, Yu. Zadorozhny, Y. Liu, D.G. Schlom, F. Lichtenberg, J.G. Bednorz
Journal of Physics and Chemistry of Solids **59**, 2215 – 2217 (1998)
<https://doi.org/10.1016/S0022-3697%2898%2900215-7>
33. **Strontium Niobate: Signature for Unusual Fermi Surface by NEXAFS**
C.A. Kuntscher, S. Gerhold, N. Nücker, S. Schuppler, C.S. Gopinath, D.H. Lu, F. Lichtenberg, J. Mannhart
1998 Activity Report of the Brookhaven National Synchrotron Light Source
32. **Centrosymmetric or noncentrosymmetric? Case study, Generalization, and Structural Redetermination of Sr₅Nb₅O₁₇**
S.C. Abrahams, H.W. Schmalle, T. Williams, A. Reller, F. Lichtenberg, D. Widmer, J.G. Bednorz, R. Spreiter, Ch. Bosshard, P. Gunter
Acta Crystallographica Section B **54**, 399 – 416 (1998)
<https://doi.org/10.1107/S0108768197019642>
31. **Electronic structure of SrNbO_{3.45}: angle-resolved photoemission results**
D.H. Lu, C.S. Gopinath, M. Schmidt, T.R. Cummins, N. Nücker, S. Schuppler, F. Lichtenberg
Physica C: Superconductivity **282 - 287**, 995 – 996 (1997)
<https://doi.org/10.1016/S0921-4534%2897%2990648-1>
30. **Two-Dimensional fermi liquid behavior of the superconductor Sr₂RuO₄**
Y. Maeno, K. Yoshida, H. Hashimoto, S. Nishizaki, S. Ikeda, M. Nohara, T. Fujita, A. P. Mackenzie, N. E. Hussey, J.G. Bednorz, F. Lichtenberg
Journal of the Physical Society of Japan **66**, 1405 – 1408 (1997)
<https://doi.org/10.1143/JPSJ.66.1405>
29. **Relationship between composition, volume expansion and cyclic stability of AB₅ type metalhydride electrodes**
A. Züttel, D. Chartouni, K. Gross, P. Spatz, M. Bächler, F. Lichtenberg, A. Fölzer, N.J.E. Adkins
Journal of Alloys and Compounds **253 - 254**, 626 – 628 (1997)
<https://doi.org/10.1016/S0925-8388%2896%2902976-3>

28. **Development of AB₅ type hydrogen storage alloys with low Co content for rechargeable Ni/MH batteries with respect to electric vehicle applications**
F. Lichtenberg, U. Köhler, A. Fölzer, N.J.E. Adkins, A. Züttel
Journal of Alloys and Compounds. **253 - 254**, 570 – 573 (1997)
<https://doi.org/10.1016/S0925-8388%2896%2902987-8>
27. **Fermi surface and extended van Hove singularity in the non-cuprate layered perovskite superconductor Sr₂RuO₄**
D.H. Lu, M. Schmidt, T.R. Cummins, S. Schuppler, F. Lichtenberg, J.G. Bednorz
Journal of Low Temperature Physics **105**, 1587 – 1592 (1996)
<https://doi.org/10.1007/BF00753926>
26. **Nature of the electronic states in the layered perovskite non-cuprate superconductor Sr₂RuO₄**
M. Schmidt, T.R. Cummins, M. Bürk, D.H. Lu, N. Nücker, S. Schuppler, F. Lichtenberg
Physical Review B **53**, R14761 – R14764 (1996)
<https://doi.org/10.1103/PhysRevB.53.R14761>
25. **Phonon Raman scattering of Sr₂RuO₄**
M. Udagawa, T. Minami, N. Ogita, Y. Maeno, F. Nakamura, T. Fujita, J.G. Bednorz, F. Lichtenberg
Physica B: Condensed Matter **219 - 220**, 222 – 224 (1996)
<https://doi.org/10.1016/0921-4526%2895%2900702-4>
24. **Fermi surface and extended van Hove singularity in the non-cuprate superconductor Sr₂RuO₄**
D.H. Lu, M. Schmidt, T.R. Cummins, S. Schuppler, F. Lichtenberg, J.G. Bednorz
Physical Review Letters **76**, 4845 – 4848 (1996)
<https://doi.org/10.1103/PhysRevLett.76.4845>
23. **Occupied and unoccupied electronic states in a layered perovskite superconductor without copper: Band dispersions, van Hove singularity and hole states in Sr₂RuO₄**
T.R. Cummins, M. Schmidt, D.H. Lu, M. Bürk, S. Schuppler, F. Lichtenberg, J.G. Bednorz
Society of Photo-Optical Instrumentation Engineers SPIE Vol. **2696**, 533 – 543 (1996)
<https://doi.org/10.1117/12.241787>
22. **Properties of Zr(V_{0.25}Ni_{0.75})₂ metal hydride as active electrode material**
Andreas Züttel, Felix Meli, Daniel Chartouni, Louis Schlapbach, Frank Lichtenberg, Bernd Friedrich
Journal of Alloys and Compounds **239**, 175 – 182 (1996)
<https://doi.org/10.1016/0925-8388%2896%2902259-1>

21. **Spectroscopic manifestation of the mass renormalization in the layered 4d-electron superconductor Sr₂RuO₄**
I.H. Inoue, Y. Aiura, Y. Nishihara, Y. Haruyama, S. Nishizaki, Y. Maeno, T. Fujita, J.G. Bednorz, F. Lichtenberg
 Journal of Electron Spectroscopy and Related Phenomena **78**, 175 – 178 (1996)
<https://doi.org/10.1016/S0368-2048%2896%2980055-7>
20. **Redistribution of the spectral intensity in the layered 4d-electron superconductor Sr₂RuO₄ observed by the photoemission spectroscopy**
I.H. Inoue, Y. Aiura, Y. Nishihara, Y. Haruyama, S. Nishizaki, Y. Maeno, T. Fujita, J.G. Bednorz, F. Lichtenberg
 Physica B: Condensed Matter **223 - 224**, 516 – 518 (1996)
<https://doi.org/10.1016/0921-4526%2896%2900160-3>
19. **Hydrogen storage alloys for rechargeable alkaline nickel-hydride batteries**
F. Lichtenberg, U. Köhler
 Kurzfassungen zur Innomata '96, p. 153, (1996) (DEHEMA e.V., Germany)
18. **Stability enhancement of the CoOOH conductive network of nickel hydroxide electrodes**
F. Lichtenberg, K. Kleinsorgen
 Journal of Power Sources **62**, 207 – 211 (1996)
<https://doi.org/10.1016/S0378-7753%2896%2902431-7>
17. **Physical and structural properties of the perovskite-related oxides LaTiO_x, SrNbO_x, CaNbO_x and Sr₂RuO₄**
F. Lichtenberg
 Abstract booklet of the International Symposium on the Reactivity of Solids (XIIIth ISRS), Hamburg, Germany (1996)
16. **Spectroscopic manifestation of the mass renormalization in correlated d-electron metals Ca_{1-x}Sr_xVO₃ and Sr₂RuO₄**
I.H. Inoue, I. Hase, Y. Aiura, Y. Haruyama, Y. Nishihara, A. Fujimori, S. Nishizaki, Y. Maeno, T. Fujita, F. Lichtenberg, J.G. Bednorz
 Proceedings of the International Conference on Physical Phenomena at High Magnetic Fields - II (World Scientific, Singapore), p. 519 (1996)
15. **Novel hall-coefficient behavior in superconducting Sr₂RuO₄**
N. Shirakawa, K. Murata, Y. Nishihara, S. Nishizaki, Y. Maeno, T. Fujita, J.G. Bednorz, F. Lichtenberg, N. Hamada
 Journal of the Physical Society of Japan. **64**, 1072 – 1075 (1995)
<https://doi.org/10.1143/JPSJ.64.1072>

14. **Novel semiconducting perovskite-related phase: Sr₅Nb₅O₁₇**
H. Schmalle, T. Williams, A. Reller, F. Lichtenberg, D. Widmer, J.G. Bednorz
Acta Crystallographica Section C **51**, 1243 – 1246 (1995)
<https://doi.org/10.1107/S0108270195000977>
13. **Superconductivity in a layered perovskite without copper**
Y. Maeno, H. Hashimoto, K. Yoshida, S. Nishizaki, T. Fujita, J.G. Bednorz, F. Lichtenberg
Nature **372**, 532 – 534 (1994)
<http://dx.doi.org/10.1038/372532a0>
12. **Refinement of the structure of Sr₂RuO₄ with 100 and 295 K x-ray data**
L. Walz, F. Lichtenberg
Acta Crystallographica Section C **49**, 1268 – 1270 (1993)
<http://dx.doi.org/10.1107/S0108270192013143>
11. **Layered perovskitic structures in pure and doped LaTiO_{3.5-x} and SrNbO_{3.5-x}**
T. Williams, F. Lichtenberg, D. Widmer, J.G. Bednorz, A. Reller
Journal of Solid State Chemistry **103**, 375 – 386 (1993)
<https://doi.org/10.1006/jssc.1993.1113>
10. **Sr₂RuO₄: a metallic substrate for the epitaxial growth of YBa₂Cu₃O_{7-x}**
F. Lichtenberg, A. Catana, J. Mannhart, D.G. Schlom
Appl. Phys. Lett. **60**, 1138 – 1140 (1992)
<https://doi.org/10.1063/1.106432>
9. **On the crystal structure of La₂Ti₂O₇ and La₅Ti₅O₁₇: high resolution electron microscopy**
T. Williams, H. Schmalle, A. Reller, F. Lichtenberg, D. Widmer, J.G. Bednorz
Journal of Solid State Chemistry **93**, 534 – 548 (1991)
<https://doi.org/10.1016/0022-4596%2891%2990328-F>
8. **New layered perovskites in the Sr-Ru-O system:
A transmission electron microscope study**
Tim Williams, Frank Lichtenberg, Armin Reller, Georg Bednorz
Materials Research Bulletin **26**, 763 – 770 (1991)
<https://doi.org/10.1016/0025-5408%2891%2990065-T>
7. **Phase diagram of LaTiO_x: From 2D layered ferroelectric insulator to 3D weak ferromagnetic semiconductor**
F. Lichtenberg, D. Widmer, J.G. Bednorz, T. Williams, A. Reller
Zeitschrift für Physik B Condensed Matter **82**, 211 – 216 (1991)
<https://doi.org/10.1007/BF01324328>

6. **Electric and magnetic properties of new layered conducting titanium and niobium oxides**
F. Lichtenberg, T. Williams, A. Reller, D. Widmer, J.G. Bednorz
 Zeitschrift für Physik B Condensed Matter **84**, 369 – 374 (1991)
<https://doi.org/10.1007/BF01314010>

5. **Physical and structural properties of new layered conducting Ti, Nb and Ru oxides**
F. Lichtenberg
 Dissertation, University of Zurich, Switzerland (1991)

4. **A new series of compounds in the T* structure: $\text{La}_{2-x-z}\text{Sr}_x\text{Ln}_z\text{CuO}_4$ (Ln = Eu, Gd, Tb and Dy)**
Y. Maeno, F. Lichtenberg, T. Williams, J. Karpinski, J.G. Bednorz
 Japanese Journal of Applied Physics **28**, L 926 – L 929 (1989)
<https://doi.org/10.1143/JJAP.28.L926>

3. **Low temperature properties of amorphous $(\text{Mo}_{1-x}\text{Ru}_x)_{0.8}\text{P}_{0.2}$**
F. Lichtenberg, H. Raad, W. Morr, G. Weiss
 Proceedings of the Third International Conference on Phonon Physics **1**, 471 – 473, Heidelberg, Germany (1989)

2. **Die Wechselwirkung von Leitungselektronen mit Tunnelsystemen in metallischen Gläsern**
F. Lichtenberg
 Diploma thesis, University of Heidelberg, Germany (1988)

1. **Properties of the new Bi-Sr-Ca-Cu-O superconductors**
F. Lichtenberg, C. Rossel, J.G. Bednorz, A. Reller
 Physica C: Superconductivity **153 - 155**, 617 – 618 (1988)
<https://doi.org/10.1016/S0921-4534%2888%2980003-0>

Patents

6. **Europäisches Patent EP 0 756 343 B1** (1999)
 Legierungen für die Verwendung als aktives Material für die negative Elektrode einer alkalischen wiederaufladbaren Nickel-Metallhydrid-Batterie und Verfahren zu ihrer Herstellung

United States Patent 5 738 958 (1998)
 Alloys for use as active material for the negative electrode of an alkaline, rechargeable nickel-metal hydride battery, and process for its production
<https://www.google.com/na/patents/US5738958?cl=en>

Frank Lichtenberg

5. **Europäisches Patent EP 0 694 981 B1** (1998)
 Gasdicht verschlossener alkalischer Akkumulator in Form einer Knopfzelle
United States Patent 5 800 947 (1998)
 Gastight, sealed alkaline storage battery in the form of a button cell
<https://www.google.com.na/patents/US5800947?cl=en>
Uwe Köhler, Christoph Klaus, Günter Hoffmann, Frank Lichtenberg

4. **Europäisches Patent EP 0 736 919 B1** (1998)
 Alkalische Metalloxid-Metallhydrid-Batterie
United States Patent 5 738 953 (1998)
 Alkaline metal oxide / metal hydride battery
<https://www.google.com.na/patents/US5738953?cl=en>
Frank Lichtenberg, Uwe Köhler, Klaus Kleinsorgen, Andreas Fölzer, Alexander Bouvier

3. **Europäisches Patent EP 0 658 948 B1** (1997)
 Elektrischer Nickel-Metallhydrid-Akkumulator mit graphitenthaltender Nickelhydroxidelektrode
United States Patent 5 500 309 (1996)
 Ni / Metal hydride accumulator
<https://www.google.com.na/patents/US5500309?cl=en>
Frank Lichtenberg, Klaus Kleinsorgen, Günter Hofmann

2. **United States Patent 5 310 706** (1994)
 Method for manufacturing high T_c superconducting circuit elements with metallic substrate
Frank Lichtenberg, Jochen Mannhart, Darrell Schlom
<https://www.google.com.na/patents/US5310706?cl=en>

1. **United States Patent 5 266 558** (1993)
 Superconducting circuit elements with metallic substrate and method
 for manufacturing the same
Frank Lichtenberg, Jochen Mannhart, Darrell Schlom
<https://www.google.com.na/patents/US5266558?cl=en>