**Invited talks, publications and patents**

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Status: April 2025

*List of invited talks*

1. **Micro actuators for light deflection and modulation**Bremen University, Bremen, Germany (2003)
2. **Photonic microsystems: An enabling technology for light deflection and modulation**SPIE Photonics West, MOEMS Display and Imaging Systems, San Jose, USA, DOI: 10.1117/12.523948 (2004)
3. **Microsystems for light processing**Symposium on Design, Test, Integration and Packaging of MEMS/MOEMS, Montreux, Switzerland (2005)
4. **Optical MEMS for advanced spectrometers**
Optical MEMS, Oulo, Finland, DOI: 10.1109/OMEMS.2005.1540106 (2005)
5. **Micro optical devices for light deflection and modulation**
Microsystems Technology Congress, Freiburg, Germany (2005)
6. **Micro scanning mirrors**
Swiss Federal Institute of Technology, Zurich, Switzerland (2006)
7. **2D micro scanner with high deflection for image acquisition**Microsystems Technology Congress, Dresden, Germany (2007)
8. **Single crystalline micro mirrors**
Sino-German Symposium „The Silicon Age“, Hangzhou, China (2008)
9. **Silicon based micro optical modulators**
MicroMechanics Europe Workshop, Aachen, Germany (2008)
10. **The high versatility of silicon based micro optical modulators**
SPIE Photonics West, SPIE MOEMS-MEMS: Micro- and Nanofabrication, Plenary Talk, San Jose, USA, DOI: 10.1117/12.828322 (2009)
11. **Fast scanning with MEMS mirrors - Possibilities and limitations**
Workshop „Fast beam deflection for laser applications“, Nuremberg, Germany (2013)
12. **High frequency MEMS scanners for imaging and patterning**
University of Freiburg, Freiburg, Germany (2014)
13. **Micro mirrors for high-speed laser deflections and patterning**
8th International Conference on Laser Assisted Net Shape Engineering LANE, Fürth, Germany, DOI: 10.1016/j.phpro.2014.08.090 (2014)
14. **Scanning micro mirrors and micro mirror arrays for laser deflection and patterning**
Kassel University, Kassel, Germany (2015)
15. **Mikrooptische Systeme für intelligente industrielle Lösungen [Micro-optical systems for intelligent industrial solutions]**
VDMA Fall Conference, Dresden, Germany (2015)
16. **Implantate - Eine interdisziplinäre Herausforderung [Implants - An interdisciplinary challenge]**
Workshop, Potsdam University, Germany (2016)
17. **Elektrostatische Mikro- und Nanoaktoren von denen Sie hören werden [Electrostatic micro and nano actuators that you will hear about]**
Brandenburg University of Technology, Cottbus-Senftenberg, Germany (2016)
18. **A novel electrostatic micro-actuator class and its application potential for optical MEMS**
International Conference on Optical MEMS and Nanophotonics OMN, Singapore (2016)
19. **Component and system integration of optical scanners and light modulators**
Handlungsfeldkonferenz Mikrosystemtechnik, Berlin, Germany (2016)
20. **Micro scanner tuned EC quantum cascade laser for fast mid infrared spectroscopic sensing**
Micro Photonics Conference, Berlin, Germany (2016)
21. **A contribution to the expansion of the applicability of electrostatic forces in micro transducers**
SPIE Photonics West, MOEMS and Miniaturized Systems XVI, San Francisco, USA, DOI: 10.1117/12.2249575 (2017)
22. **A new class of electrostatic micro and nano actuators**
Stanford University, Stanford, USA (2017)
23. **A novel approach for high efficient electrostatic micro/nano transducers**
University of California, Berkeley, USA (2017)
24. **Programmierbare optische Oberflächen - Mikrospiegelmatrizen mit nm-Auflösung [Programmable optical surfaces - Micro-mirror matrices with nm resolution]**Technical University of Applied Sciences Wildau, Germany (2017)
25. **Photonik: Eine Schlüsseltechnologie der Digitalisierung [Photonics: A key technology of digitalization]**
Clusterkonferenz Optik und Photonik, Potsdam, Germany (2017)
26. **Advances in MOEMS technologies for high quality imaging systems**
Keynote talk at SPIE Photonics West, Conf. on Advanced Lithography, San Jose, USA (2018)
27. **Advanced optical MEMS for high quality imaging systems**
Brandenburg University of Technology, Cottbus-Senftenberg, Germany (2018)
28. **Ein Streifzug durch die Welt der MEMS [A journey into the world of MEMS]**
Brandenburg University of Technology, Cottbus-Senftenberg, Germany (2018)
29. **Micro energy harvester: Device concepts and materials**Brandenburg University of Technology, Cottbus-Senftenberg, Germany (2019)
30. **iCampµs: Development and transfer platform for integrated microsensor technologies in a connected world**

Date 21, Virtual Conference and Exhibition (2021)

1. **iCampµs Cottbus: Innovationen in der Mikrosensorik**

Forschungsfabrik Mikroelektronik Deutschland, Digitalkonferenz (2021)

1. **Silicon based Micromechanical Actuators and selected Applications**

Seminar Politecnico di Milano, Milan, Italy (2023)

1. **Microelectronics and microsensor research at Brandenburg University of Technology Cottbus-Senftenberg (BTU C-S)**

Photonics Days Berlin Brandenburg 2023, Berlin (2023)

1. **Silicon integrated electrostatic drives**

Keynote talk at ACTUATOR 2024, Wiesbaden (2024),

<https://doi.org/10.24406/publica-3964>

1. **Digitalisierung und KI für Gesellschaft, Wirtschaft und Forschung - aus Sicht der Sensorik**

7. Cottbuser Tumorsymposium, Cottbus (2024),

<https://doi.org/10.24406/publica-3965>

1. H. Schenk

**Highly integrated active Spatial Light Modulators – from imaging to holography**

Keynote talk at 17th International Conference on Machine Vision, Edinburgh (2024),

<https://doi.org/10.24406/publica-3963>

*List of journal contributions (refereed)*

1. D. R. Yakovlev, V. P. Kochereshko, R. A. Suris, H. Schenk, W. Ossau, A. Waag, G. Landwehr, P. C. M. Christianen, J. C. Maan
**Combined exciton-cyclotron resonance in quantum well structures**
In: Physical Review Letters, USA: APS, Vol.79/20, pp. 3974-3977, DOI: 10.1103/PhysRevLett.79.3974 (1997)
2. H. Schenk, M. Wolf, G. Mackh, U. Zehnder, W. Ossau, A. Waag, G. Landwehr
**Influence of the negative thermal-expansion coefficient on the luminescence properties of (CdMnMg)Te**In: Journal of Applied Physics, Vol.79/11, pp. 8704-8711, DOI: 10.1063/1.362496 (1996)
3. H. Schenk, P. Dürr, U. Sobe
**Antrieb für Mikromechanische Scannerspiegel**
In: Elektronik Heft 24, pp. 54-58 (1999)
4. H. Schenk
**Ablenkeinheiten für die Sensorik**
In: Sensor-Report Nr. 5, pp. 18 (2000)
5. H. Schenk
**Leuchtende Ablenkung: Mikromechanische Scannerspiegel erreichen 30 kHz**
In:Elektronik-Praxis, Nr.19, pp. 114-116 (2000)
6. H. Schenk, P. Dürr, T. Haase, D. Kunze, U. Sobe, H. Lakner, H. Kück
**Large deflection micromechanical scanning mirrors for linear scans and pattern generation**
In: Journal of Selected Topics in Quantum Electronics, invited paper, Vol. 6, No. 5, pp. 715-722, DOI: 10.1109/2944.892609 (2000)
7. H. Schenk, P. Dürr, D. Kunze, H. Lakner, H. Kück
**A resonantly excited 2D-micro-scanning-mirror with large deflection**
In: Sensors and Actuators A 89, pp. 104-111, DOI: 10.1016/S0924-4247(00)00529-X (2001)
8. H. Grüger, H. Schenk, A. Wolter, A. Heberer, F. Zimmer
**Spektrometer mit mikromechanischem Gitter: Mikro-opto-mechanische Systeme durchbrechen Preisbarrieren**
In:Sensor Report, Nr. 6, pp. 16-17 (2004)
9. H. Schenk, A. Wolter, U. Dauderstädt, A. Gehner, H. Lakner
**Micro-opto-electro-mechanical-systems technology and its impact on photonic applications**
In: Journal of Microlithography, Microfabrication and Microsystems, Vol. 4, No. 4, pp. 041501-11, DOI: 10.1117/1.2131824 (2005)
10. A. Gatto, M. Yang, N. Kaiser, J. Heber, J.-U. Schmidt, T. Sandner, H. Schenk, H. Lakner
**High-performance coatings for micromechanical mirrors**In: Journal of Applied Optics, Vol. 45, No. 7, pp. 1602-1607, DOI: 10.1364/AO.45.001602 (2006)
11. M. Kraft, A. Kenda, A. Frank, W. Scherf, A. Heberer, T. Sandner, H. Schenk, F. Zimmer
**Single-detector micro-mechanical scanning grating spectrometer**In: Anal Bioanal Chem 386, pp. 1259-1266, DOI: 10.1007/s00216-006-0726-5 (2006)
12. S.-T. Hsu, T. Klose, C. Drabe, H. Schenk

**Fabrication and characterization of a dynamically flat high resolution microscanner**

In: Journal of Optics A: Pure and Applied Optics, Vol. 10, 044005, pp. 1-8, DOI: 10.1088/1464-4258/10/4/044005 (2008)

1. M. Scholles, A. Bräuer, K. Frommhagen, C. Gerwig, H. Lakner, H. Schenk, M. Schwarzenberg

**Ultra compact laser projection systems based on two-dimensional resonant microscanning mirrors**

In: Journal of Micro/Nanolithography, MEMS, and MOEMS, Vol. 7, No. 2, pp. 021001-1-11, DOI: 10.1117/1.2911643 (2008)

1. T. Sandner, C. Drabe, H. Schenk, A. Kenda, W. Scherf

**Translatory MEMS actuators for optical path length modulation in miniaturized Fourier-transform infrared spectrometers**

In: Journal of Micro/Nanolithography, MEMS, and MOEMS, Vol. 7, No. 2, pp. 021006-1-12, DOI: 10.1117/1.2945227 (2008)

1. F. Zimmer, A. Heberer, H. Grüger, H. Schenk

**Investigation and characterization of highly efficient near-infrared scanning gratings used in near-infrared microspectrometers**

In: Journal of Micro/Nanolithography, MEMS, and MOEMS, Vol. 7, No. 2, pp. 021005-1-10, DOI: 10.1117/1.2911035 (2008)

1. H. Grüger, T. Egloff, M. Scholles, F. Zimmer, H. Schenk

**Spectrometers: MOEMS scanning grating chips reveal spectral images**

In: Laser Focus World 44, No. 7, pp. 52-55 (2008)

1. H. Schenk, T. Sandner, C. Drabe, T. Klose, H. Conrad

**Single crystal silicon micro mirrors**

In: Phys. Status Solidi C 6, No. 3, pp. 728-735, DOI: 10.1002/pssc.200880714 (2009)

1. H. Conrad, T. Sandner, H. Schenk, H. Lakner

**Eine »Reinkarnation« in der Strukturmechanik**

In: CAD-CAM Report, No. 4, pp. 16-19 (2009)

1. C. Ataman, H. R. Seren, H. Schenk, H. Ürey

**Dynamic characterization of MEMS scanners**

In: Sensors & Transducers Journal, Vol. 108, No. 9, pp. 31-39 (2009)

1. M. Lenzhofer, A. Tortschanoff, A. Frank, T. Sandner, H. Schenk, M. Kraft, A. Kenda
**MOEMS translatory actuator characterisation, position encoding and closed-loop control**In: Microsystem Technologies 16, No. 5, pp. 901-907, DOI: 10.1007/s00542-010-1029-5 (2010)
2. A. Tortschanoff, M. Lenzhofer, A. Frank, M. Wildenhain, T. Sandner, H. Schenk, A. Kenda
**Position encoding and phase control of resonant MOEMS-mirrors**
In: Sensors and Actuators A 162, pp. 235-240, DOI: 10.1016/j.proche.2009.07.328 (2010)
3. T. Sandner, T. Grasshoff, M. Schwarzenberg, R. Schroedter, H. Schenk
**Quasistatic microscanner with linearized scanning for an adaptive three-dimensional laser camera**
In: Journal of Micro/ Nanolithography, MEMS, and MOEMS, Vol. 13, No. 1, pp. 011114-1-11, DOI: 10.1117/1.JMM.13.1.011114 (2014)
4. T. Sandner, T. Grasshoff, E. Gaumont, H. Schenk, A. Kenda
**Translatory MOEMS actuator and system integration for miniaturized Fourier transform spectrometers**
In: Journal of Micro/ Nanolithography, MEMS, and MOEMS, Vol. 13, No. 1, 011115-1-14, DOI: 10.1117/1.JMM.13.1.011115 (2014)
5. H. Schenk, J. Grahmann, T. Sandner, M. Wagner, U. Dauderstädt, J.-U. Schmidt
**Micro mirrors for high-speed laser deflections and patterning**
In: Physics Procedia, invited paper, Vol. 56, pp. 7-18, DOI: 10.1016/j.phpro.2014.08.090 (2014)
6. B. Kaiser, T. Grasshoff, C. Drabe, H. Conrad, H. Schenk
**About stress in filled DRIE-trenches**
In: Journal of Micromechanics and Microengineering (JMM), Vol. 25, No. 8, 085003, DOI: 10.1088/0960-1317/25/8/085003 (2015)
7. H. Conrad, H. Schenk, B. Kaiser, S. Langa, M. Gaudet, K. Schimmanz, M. Stolz, M. Lenz
**A small-gap electrostatic micro-actuator for large deflections**
In: Nature Communications 6, 10078, DOI: 10.1038/ncomms10078 (2015)
8. Vl. Kolkovsky, R. Stübner, S. Langa, U. Wende, B. Kaiser, H. Conrad, H. Schenk
**Influence of annealing in H atmosphere on the electrical properties of Al2O3 layers grown on p-type Si by the atomic layer deposition technique**
In: Solid-State Electronics 123, pp. 89-95, DOI: 10.1016/j.sse.2016.06.005 (2016)
9. H. Conrad, B. Kaiser, M. Gaudet, S. Langa, M. Stolz, S. Uhlig, K. Schimmanz, H. Schenk
**A novel electrostatic actuator class**
In: Procedia Engineering, 168, pp. 1533-1536, DOI: 10.1016/j.proeng.2016.11.454 (2016)
10. S. Langa, H. Conrad, B. Kaiser, M. Stolz, M. Gaudet, S. Uhlig, K. Schimmanz, H. Schenk
**Technological aspects of a new micro-electro-mechanical actuation principle: nano-e-drive**
In: Microsyst Technol, Vol. 23, Iss. 12, pp. 5697-5708, DOI: 10.1007/s00542-017-3360-6 (2017)
11. R. Borcia, M. Bestehorn, S. Uhlig, M. Gaudet, H. Schenk
**Liquid pumping induced by transverse forced vibrations of an elastic beam: A lubrication approach**
In: Phys. Rev. Fluids, Vol. 3, Iss. 8, No. 084202, DOI: 10.1103/PhysRevFluids.3.084202 (2018)
12. S. Uhlig, M. Gaudet, S. Langa, K. Schimmanz, H. Conrad, B. Kaiser, H. Schenk
**Electrostatically driven in-plane silicon micropump for modular configuration**
In: Micromachines, Vol. 9, No. 4, DOI: 10.3390/mi9040190 (2018)
13. B. Kaiser, S. Langa, L. Ehrig, M. Stolz, He. Schenk, H. Conrad, H. Schenk, K. Schimmanz, D. Schuffenhauer
**Concept and proof for an all-silicon MEMS micro speaker utilizing air chambers**
In: Microsystems & Nanoengineering (Nature), Vol. 5, No. 43, DOI: 10.1038/s41378-019-0095-9 (2019)
14. U. Dauderstädt, P. Dürr, A. Gehner, M. Wagner, H. Schenk

**Analog Spatial Light Modulators based on Micromirror Arrays**

In: Micromachines, Special Issue "Beam Steering via Arrayed Micromachines", ISSN 2072-666X, Vol. 12, No. 5, DOI: 10.3390/mi12050483 (2021)

1. J. M. Monsalve, A. Melnikov, B. Kaiser, D. Schuffenhauer, M. Stolz, L. Ehrig, He. Schenk, H. Conrad, H. Schenk

**Large-Signal Equivalent-Circuit Model of Asymmetric Electrostatic Transducers**

In: IEEE/ASME Transactions on Mechatronics, Vol. 27, No. 5, pp. 2612-2622 DOI: 10.1109/TMECH.2021.3112267 (2022)

1. B. Kaiser, He. Schenk, L. Ehrig, F. Wall, J. M. Monsalve, S. Langa, M. Stolz, A. Melnikov, H. Conrad, D. Schuffenhauer, H. Schenk

**The push-pull principle: an electrostatic actuator concept for low distortion acoustic transducers**

In: Microsystems & Nanoengineering (Nature), Vol. 8, Nr. 125, DOI: 10.1038/s41378-022-00458-z (2022)

1. S. Schweiger, T. Schulze, S. Schlipf, P. Reinig, H. Schenk

**Characterization of two-photon-polymerization lithography structures via Raman spectroscopy and nanoindentation.**

In: Journal of Optical Microsystems Vol. 2, Iss. 3, DOI: 10.1117/1.jom.2.3.033501 (2022)

1. J. M. Monsalve, A. Melnikov, M. Stolz, A. Mrosk, M. Jongmanns, F. Wall, S. Langa, I. Marica-Bercu, T. Brändel, M. Kircher He. Schenk, B. Kaiser, H. Schenk

**Proof of concept of an air-coupled electrostatic ultrasonic transducer based on lateral motion**

In: Sensors and Actuators A: Physical, Vol. 345, DOI: 10.1016/j.sna.2022.113813 (2022)

1. F. Wall, He. Schenk, A. Melnikov, B. Kaiser, H. Schenk

**A non-destructive electro-acoustic method to characterize the pull-in voltage of electrostatic actuators**

In:Nonlinear Dynamics, 10.1007/s11071-023-08811-1,(2023)

1. S. Uhlig, M. Gaudet, S. Langa, C. Ruffert, M. Jongmanns, H. Schenk

**Highly integrable silicon micropumps using lateral electrostatic bending**

**actuators**

In: Microsystem Technologies, <https://doi.org/10.1007/s00542-024-05635-w>, (2024)

1. J. M. Monsalve Guaracao, S. Langa, M. Stolz, A. Mrosk, B. Kaiser, H. Schenk

**Design of micromachines under uncertainty with the sample-average approximation method**

In: Journal of Advanced Mechanical Design, Systems, and Manufacturing, <https://doi.org/10.1299/jamdsm.2024jamdsm0018>, (2024)

*Contributions to conferences and workshops*

1. L. Worschech, C. Fischer, H. Schenk, W. Ossau, E. Kurtz, H. Schäfer, W. Faschinger, A. Waag, G. Landwehr
**Linearly polarized luminescence associated with structural defects in MBE grown ZnSe**In: International Symposium on Blue Laser and Light Emmitting Diodes, Chiba, Japan, 1996, Blue Laser and Light Emitting Diodes, xviii+580, pp. 421-424 (1996)
2. B. Jobst, S. Strauf, P. Bäume, E. Kurtz, H. Schenk, J. Gutowski, D. Hommel, G. Landwehr
**Influence of the sulphur and magnesium content on donor-acceptor-pair emission in nitrogen-plasma** **doped ternary and quaternary Zn1- xMgxSySe1-y**
In: International Symposium on Blue Laser and Light Emmitting Diodes, Chiba, Japan, 1996, Blue Laser and Light Emitting Diodes, xviii+580, pp. 409-412 (1996)
3. J. Linsmeier, K. Wüst, H. Schenk, U. Hilpert, W. Ossau, J. Fricke, R. Arens-Fischer
**Chemical surface modification of porous silicon using tetraethoxysilane**
In: E-MRS Spring Conference, Symposium L: New Developments in Porous Silicon: Relation with other Nanostructured Porous Materials, Strasbourg, France, 1996, Thin Solid Films, Vol. 297/1-2, pp. 26-30, DOI: 10.1016/S0040-6090(96)09360-1 (1997)
4. H. Schenk, P. Dürr, H. Kück
**A novel electrostatically driven torsional actuator**
In: International Conference on Micro Opto Electro Mechanical Systems, Mainz, Germany, 1999, pp. 3-10 (1999)
5. H. Lakner, W. Doleschal, P. Dürr, A. Gehner, H. Schenk, A. Wolter, G. Zimmer
**Micromirrors for direct writing systems and scanners**
In: SPIE Conference: Miniaturized Systems with Micro-optics and MEMS, Santa Clara, USA, 1999, Proc. SPIE 3878, pp. 217-227, DOI: 10.1117/12.361264 (1999)
6. H. Schenk, P. Dürr, D. Kunze, H. Kück
**A new driving principle for micromechanical torsional actuators**
In: International Mechanical Engineering Congress & Exhibition, Nashville, USA, 1999, Micro-Electro-Mechanical Systems (MEMS), Proc. MEMS, Vol. 1, pp. 333-338 (1999)
7. H. Schenk, P. Dürr, D. Kunze, H. Lakner, H. Kück
**An electrostatically excited 2D-micro-scanning-mirror with an in-plane configuration of the driving** **electrodes**
In: International Conference on Micro Electro Mechanical Systems, Miyazaki, Japan, 2000, Proc. MEMS, pp. 473-478, DOI: 10.1109/MEMSYS.2000.838563 (2000)
8. H. Schenk, P. Dürr, D. Kunze, H. Lakner, H. Kück
**Design and modelling of large deflection micromechanical 1D- and 2D-scanning-mirrors**
In: SPIE Conference: MOEMS and miniaturized Systems, Santa Clara, USA, 2000, Proc. SPIE 4178, pp. 116-125, DOI: 10.1117/12.396479 (2000)
9. H. Schenk, A. Wolter, H. Lakner
**Design optimization of an electrostatically driven micro scanning mirror**
In: SPIE Conference: MOEMS and miniaturized Systems II, San Francisco, USA, 2000, Proc. SPIE 4561, pp. 35-44, DOI: 10.1117/12.443106 (2001)
10. E. Gaumont, A. Wolter, H. Schenk, G. Georgelin, M. Schmoger
**Mechanical and electrical failures and reliability of Micro Scanning Mirrors**In:International Symposium on the Physical and Failure Analysis of Integrated Circuits, Singapore, 2002, Proc. IPFA, pp. 212-217, DOI: 10.1109/IPFA.2002.1025665 (2002)
11. H. Lakner, P. Dürr, H. Schenk, A. Gehner
**Mustererzeugung und -erfassung mit mikromechanischen Spiegeln und Spiegelarrays**
In: VDE-Kongress NetWorlds: Leben in vernetzten Welten, Dresden, Germany, 2002, Vol. 2, pp. 141-146 (2002)
12. A. Wolter, H. Schenk, E. Gaumont, H. Lakner
**Improved layout for a resonant 2D micro scanning mirror with low operation voltages**
In: SPIE Conference: MOEMS Display and Imaging Systems, San Jose, USA, 2003, Proc. SPIE 4985, pp. 72-82, DOI: 10.1117/12.472863 (2003)
13. K.-U. Roscher, U. Fakesch, H. Schenk, H. Lakner, D. Schlebusch
**Driver ASIC for synchronized excitation of resonant micro mirrors**
In: SPIE Conference: MOEMS Display and Imaging Systems, San Jose, USA, 2003, Proc. SPIE 4985, pp. 121-130, DOI: 10.1117/12.477810 (2003)
14. H. Grüger, A. Wolter, T. Schuster, H. Schenk, H. Lakner
**Realization of a spectrometer with micromachined scanning grating**
In: SPIE Conference: MEMS/ MOEMS: Advances in Photonic Communications, Sensing, Metrology, Packaging and Assembly, Bruges, Belgium, 2002, Proc. SPIE 4945, pp. 46-53, DOI: 10.1117/12.471993 (2003)
15. H. Grüger, A. Wolter, T. Schuster, H. Schenk, H. Lakner
**Performance and applications of a spectrometer with micromachined scanning grating**
In: SPIE Conference: Integrated Optics: Devices, Materials, and Technologies VII, San Jose, USA, 2003, Proc. SPIE 4987, pp. 284-291, DOI: 10.1117/12.478317 (2003)
16. P. Dürr, U. Dauderstädt, D. Kunze, M. Auvert, T. Bakke, H. Schenk, H. Lakner
**Characterization of spatial light modulators for micro lithography**
In: SPIE Conference: MOEMS Display and Imaging Systems, San Jose, USA, 2003, Proc. SPIE 4985, pp. 204-214, DOI: 10.1117/12.477803 (2003)
17. A. Gehner, M. Wildenhain, W. Doleschal, A. Elgner, H. Schenk, H. Lakner
**Improved vision by eye aberration correction using an active-matrix-addressed micromirror array**
In: SPIE Conference: MOEMS and Miniaturized Systems III, San Jose, USA, 2003, Proc. SPIE 4983, pp. 235-247, DOI: 10.1117/12.472902 (2003)
18. S. Manhart, H. Schenk, M. Kiening, L. Marchand
**Reliability assessment and lifetime testing with micro-mirrors**
In: 4th Round Table on Micro/ Nano Technologies for Space, ESTEC, Noordwijk, The Netherlands, 2003 (2003)
19. A. Wolter, H. Korth, H. Schenk, H. Lakner
**Temperature stability of the frequency of a resonant micro scanning mirror**
In: IEEE/ LEOS Conference: International Conference on Optical MEMS, Waikoloa/Hawaii, USA, 2003, pp. 55-56, DOI: 10.1109/OMEMS.2003.1233464 (2003)
20. H. Schenk, U. Dauderstädt, A. Gehner, A. Wolter, H. Grüger, C. Drabe, H. Lakner
**Photonic Microsystems: An enabling technology for light deflection and modulation**
In: SPIE Conference: MOEMS Display and Imaging Systems II, San Jose, USA, 2004, invited paper, Proc. SPIE 5348, pp. 7-21, DOI: 10.1117/12.523948 (2004)
21. C. Drabe, H. Schenk, K.-U. Roscher, D. Kunze, H. Lakner
**Accelerometer by means of a Resonant Micro Actuator**
In: SPIE Conference: MEMS/ MOEMS Components and Their Applications, San Jose, USA, 2004, Proc. SPIE 5344, pp. 124-133, DOI: 10.1117/12.524130 (2004)
22. A. Wolter, H. Schenk, H. Korth, H. Lakner
**Torsional stress, fatigue and fracture strength in silicon hinges of a micro scanning mirror**
In: SPIE Conference: Reliability, Testing, and Characterization of MEMS/ MOEMS III, San Jose, USA, 2004, Proc. SPIE 5343, pp. 176-185, DOI: 10.1117/12.524872 (2004)
23. A. Kenda, W. Scherf, R. Hauser, H. Grüger, H. Schenk
**A compact spectrometer based on a micromachined torsional mirror device**
In: IEEE Conference: International Conference on Sensors, Vienna, Austria, 2004, Proc. IEEE Vol. 3, pp. 1312-1315, DOI: 10.1109/ICSENS.2004.1426423 (2004)
24. T. Kiessling, A. Wolter, H. Schenk, H. Lakner
**Bulk micro machined quasistatic torsional micro mirror**
In: SPIE Conference on MOEMS and Miniaturized Systems IV, San Jose, USA, 2004, Proc. SPIE 5346, pp. 193-202, DOI: 10.1117/12.530717 (2004)
25. A. Wolter, H. Schenk, E. Gaumont, H. Lakner
**MEMS microscanning mirror for barcode reading: from development to production**
In: SPIE Conference: MOEMS Display and Imaging Systems II, San Jose, USA, 2004, Proc. SPIE 5348, pp. 32-39, DOI: 10.1117/12.530795 (2004)
26. U. Dauderstädt, P. Dürr, T. Karlin, H. Schenk, H. Lakner
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*Dissertation, habilitation thesis and contributions to books*

1. H. Schenk
**Ein neuartiger Mikroaktor zur ein- und zweidimensionalen Ablenkung von Licht [A novel micro actuator for one- and two-dimensional deflection of light]**Dissertation, Gerhard-Mercator-University, Duisburg (2001)
2. H. Lakner, A. Wolter, H. Schenk
**Bildgebende Mikrosysteme: Chips, die mit Licht arbeiten** **[Imaging microsystems: Chips that work with light]**Jahrbuch Optik und Feinmechanik 2001, Fachverlag Schiele & Schön, Berlin, pp. 167-190 (2001)
3. H. Schenk
**Siliziumbasierte mikrooptische Modulatoren [Silicon-based micro-optical modulators]**
Habilitation thesis, Brandenburg University of Technology, Cottbus (2008)
4. H. Schenk
**Optische Mikrosysteme [Optical microsystems]**
Chapter 17 in textbook of VDI “Mikrotechnologie für Ausbildung, Studium und Weiterbildung (Microtechnology for training, studies and training)”, Fachbuchverlag Leipzig, Carl Hanser Verlag, pp. 539-592 (2011)
5. H. Schenk, L. J. Hornbeck
**Micro Mirrors**Chapter 46 in “Nanoelectronics and Information Technology, Advanced Electronic Materials and Novel Devices”, Wiley-VCH, pp. 985-999 (2012)
6. H. Schenk, M. Schulze
**Micro Mirrors**
Chapter 49 in “Handbook of Silicon Based MEMS Materials and Technologies”, Elsevier, pp. 949-968 (2020)

*Edited publications*

1. D. L. Dickensheets, B. P. Gogoi, H. Schenk (editors)
**MOEMS and Miniaturized Systems VI**
Proceedings of SPIE, Vol. 6466 (2007)
2. D. L. Dickensheets, H. Schenk (editors)
**MOEMS and Miniaturized Systems VII**
Proceedings of SPIE, Vol. 6887 (2008)
3. W. Piyawattanametha, H. Schenk (Guest Editorial)
**Special Section on Silicon-based MOEMS and their Applications**Journal of Micro/ Nanolithography, MEMS, and MOEMS
Vol. 7, No 2, p. 080901-1 (2008)
4. D. L. Dickensheets, H. Schenk, W. Piyawattanametha (editors)
**MOEMS and Miniaturized Systems VIII**
Proceedings of SPIE, Vol. 7208 (2009)
5. H. Schenk, W. Piyawattanametha (editors)
**MOEMS and Miniaturized Systems IX**
Proceedings of SPIE, Vol. 7594 (2010)
6. H. Schenk, W. Piyawattanametha (editors)
**MOEMS and Miniaturized Systems X**
Proceedings of SPIE, Vol. 7930 (2011)
7. H. Schenk, W. Piyawattanametha, W. Noell (editors)
**MOEMS and Miniaturized Systems XI**
Proceedings of SPIE, Vol. 8252 (2012)

*List of patents and patent registrations*

1. Schenk, P. Dürr, H. Kück
**Micromechanical component comprising an oscillating body**
Status: closed. GB 1123526 (24.07.2002), IT 1123526 (24.07.2002), CH 1123526 (24.07.2002), AT 1 123 526 (24.07.2002), US 6,595,055 B1 (22.07.2003), NL 1123526, DE 598 04 942.8-08 (24.07.2002), FR 1123526 (24.07.2002), EP 1 123 526 B1 (24.07.2002)
2. H. Schenk, A. Wolter, M. Schwarzenberg
**Projection apparatus**Status: closed. US 6,843,568 B2 (18.01.2005), EP 1 419 411 B1 (19.01.2005), DE 501 05 156.2 (19.01.2005),
3. A. Kenda, W. Scherf, M. Kraft, H. Schenk
**Miniaturized fourier transform spectrometer**
Status: issued. US 7,301,643 B2 (27.11.2007), closed. AT 413 765 B (15.05.2006), US 7,301,643 B2 (27.11.2007), FR EP 1 637 850 B1 (06.01.2016), DE 50 2005 015 072.4 (06.01.2016), EP 1 637 850 B1 (06.01.2016)
4. H. Schenk, H. Grüger
**Spectrometer**Status: closed. US 7,034,936 B2 (25.04.2006), EP 1474 665 B1 (06.09.2006), DE 502 08 089.2-08 (06.09.2006)
5. H. Schenk, H. Grüger
**Spectrometer**Status: closed. US 7,027,152 B2 (11.04.2006), EP 1474 666 B1 (08.08.2007), DE 502 10 665.4-08 (08.08.2007)
6. H. Schenk, C. Drabe

**Acceleration sensor and method for detecting an acceleration**

Status: closed. DE 503 08 298.8-08 (26.09.2007), US 7,059,189 B2 (13.06.2006), EP 1 608 988 B1 (26.09.2007)

1. H. Schenk
**Micromechanical device**
Status: closed. US 7,078,778 B2 (18.07.2006), EP 1 410 047 B1 (28.02.2007), DE 501 12 140.4-08 (28.02.2007)
2. C. Drabe, A. Wolter, H. Schenk
**Micromechanical element having adjustable resonant frequency**
Status: closed. EP 1 613 969 B1 (29.07.2009), DE 503 11 766.8-08 (29.07.2009)
3. H. Schenk
**Apparatus and method for controlling or regulating an oscillating deflectable micromechanical element**
Status: issued. US 7,977,897 B2 (12.07.2011)
4. H. Schenk
**Apparatus and method for projecting images and/or processing materials**Status: closed. US 7,518,770 B2 (14.04.2009), EP 1 652 377 B1 (11.10.2006), DE 503 05 392.9-08 (11.10.2006)
5. H. Schenk, A. Wolter

**Mikromechanisches Bauelement**

Status: closed. DE 10 2006 036 499 B4 (04.06.2009)

1. H. Schenk, C. Drabe
**Micro-optical arrangement**Status: issued. US 7,301,690 B2 (27.11.2007), DE 50 2005 013 490.7 (27.02.2013), Status: closed. EP 1 717 631 B1 (27.02.2013)
2. H. Schenk, A. Wolter, T. Sandner, C. Drabe, T. Klose
**Oscillating, deflectable micromechanical element and method for use thereof**Status: issued. US 7,932,788 B2 (26.04.2011), DE 11 2006 003 849 B4 (20.09.2012)
3. T. Sandner, H. Schenk, W. Pufe
**Microoptic reflecting component**Status: issued. US 7,490,947 B2 (17.02.2009), DE 10 2006 059 091 B4 (31.03.2011), CN ZL200610167764.5 (14.11.2012)
4. T. Klose, A. Wolter, H. Schenk
**Method for the compensation of deviations occurring as a result of manufacture in the manufacture of micromechanical elements and their use**Status: issued. DE 10 2006 043 388 B3 (10.04.2008), US 7,951,635 B2 (31.05.2011), CN 200710146364 (28.03.2012)
5. H. Schenk, T. Sandner
**Mikromechanisches Bauelement und Verfahren zum Herstellen desselben [Micromechanical component having increased stiffness, and method for the production of the same]**Status: issued. DE 11 2007 003 051 B4 (20.12.2012)
6. J.-U. Schmidt, T. Sandner, H. Schenk, A. Gatto, M. Yang, J. Heber, N. Kaiser
**Micromechanical mirrors with a high-reflection coating, method for production thereof and use thereof**Status: issued. US 7,573,634 (11.08.2009); disclosure. WO06000445 (05.01.2006)
7. T. Sandner, H. Schenk, M. Scholles, M. Schwarzenberg, A. Wolter
**Projection apparatus for scanningly projection**Status: issued. US 7,847,997 B2 (07.12.2010); CN ZL 2008 1 0083459.7 (16.06.2010)
8. H. Schenk, T. Sandner, C. Drabe, T. Klose, D. Jung
**Micromechanical device with tilted electrodes**Status: issued. US 7,466,474 B2 (16.12.2008), DE 10 2008 012 825 B4 (25.08.2011), CN ZL200810081805.8 (28.03.2012)
9. D. Jung, C. Drabe, H. Schenk, T. Sandner, T. Klose, A. Wolter
**Method for generating a micromechanical structure**Status: issued. US 7,940,439 B2 (10.05.2011), CN ZL200810090384.5 (14.11.2012), DE 10 2008 013 116 B4 (11.04.2013)
10. T. Sandner, H. Schenk
**Optical device comprising a structure for avoiding reflections**Status: issued. US 7,760,414 B2 (20.07.2010), CN ZL200810081806.2 (04.05.2011), DE 10 2008 012 810 B4 (12.12.2013)
11. F. Costache, M. Blasl, H. Schenk
**Apparatus and method for guiding optical waves**
Status: issued. JP 5398923 (01.11.2013), DE 60 2010 014 412.7 (19.03.2014), US 9,046,704 B2 (02.06.2015), GB EP 2 513715 B1 (19.03.2014) Status: closed. WE EP 2 513715 B1 (19.03.2014)
12. H. Conrad, H. Schenk, C. Schirrmann, F. Zimmer, J.-U. Schmidt, T. Sandner
**Micromechanical device**
Status: issued. IT 502017000084227 (03.05.2017), US 9,164,277 B2 (20.10.2015), JP 5951640 (17.06.2016), DE 50 2011 012 156.3 (08.06.2017), FR EP 2 664 058 B1, closed. EP 2 664 058 B1 (03.05.2017),
13. F. Costache, H. Schenk, K. Bornhorst, C. Schirrmann
**Fluidic variable focal length optical lens and method of manufacturing the same**
Status: issued. US 9,250,367 B2 (02.02.2016), DE 11 2010 005 674 B4 (01.10.2020)
14. H. Schenk, J. Grahmann, H.-J. Wagner, R. Ostendorf, M. Rattunde
***Microelectromechanical system for tuning of lasers***
Status: issued. DE 10 2014 201 701 B4 (05.04.2018), US 9,893,491 B2 (13.02.2018), JP 6321190 (13.04.2018)
15. S. Langa, H. Conrad, H. Schenk, M. Stolz
**Electrostatically deflectable micromechanical device**

Status: issued. DE 10 2014 225 934 B4 (03.08.2017), US 10,483,876 B2 (19.11.2019)

1. E. Kurth, C. Kunath, H. Schenk
**Ion-sensitive structure and method for producing the same**

Status: issued. US 10,365,244 B2 (30.07.2019), DE 50 2016 014 831.7 (04.05.2022), CH 3070463 (04.05.2022), DE 10 2015 204 921 B4 (28.09.2023), closed. EP 3 070 463 (05.02.2023)

1. H. Schenk, H. Conrad, M. Gaudet, K. Schimmanz, S. Langa, B. Kaiser
**MEMS transducer for interacting with a volume flow of a fluid and method for manufacturing the same**

Status: issued. CN ZL 2016 8 0048446.9 (19.06.2020), JP 6668385 (28.02.2020), KR 10-2036429 (18.10.2019), US 10,457,544 B2 (29.10.2019), DE 50 2016 013 380.8 (07.07.2021), FR 3 308 555 (07.07.2021), GB 3 308 555 (07.07.2021), NL 3 308 555 (07.07.2021); EP 3878804 (22.01.2025), DE 502016 016 878.4 (22.01.2025), EP 3878801 (16.04.2025), DE 3878801 (16.04.2025), disclosure. EP 21168755.3 (14.06.2016)

1. H. Conrad, M. Gaudet, H. Schenk, S. Uhlig
**Micromechanical devices with mechanical actuators**

Status: issued. DE 602018015497.3 (14.04.2021), FR 3568595 (14.04.2021), US 11,639,718 (02.05.2023), closed. DE 10 2017 200 308 B4 (08.07.2021), WE 3 568 595 B1 (14.04.2021)

1. H. Schenk, H. Conrad
**MEMS-Wandler zum Interagieren mit einem Volumenstrom eines Fluids und Verfahren zum Herstellen desselben [MEMS transducer for interacting with a volume flow of a fluid, and method for producing the same]**

Status: issued. US 11,554,950 (17.01.2023), WE 3612493 (10.07.2024), DE 50 2018 015 839.8 (10.07.2024), closed. TW I717597 (01.02.2021)

1. S. Shashank, H. Schenk, M. Gaudet

**MEMS actuator and method for controlling a MEMS actuator**

Status: issued. DE 10 2020 214 445 B3 (05.05.2022)

1. H. Schenk, F. Zimmer, A. Wolter

**Mikrooptisches Beugungsgitter sowie Verfahren zur Herstellung**

Status: issued. DE11 2005 003 705.3 (02.02.2017), US 10591651 BB (17.03.2020), closed. WO 07036182 A1 (05.04.2007)

1. H. Schenk, T. Sandner, J. Heber, T. Klose, A. Bergmann, C. Gerwig, T. Knieling

**Micromechanical device with temperature stabilization and method for adjusting a defined temperature or a defined temperature course on a micromechanical device**

Status: issued. CN101301992 B (06.08.2014), DE 10 2008 013 098 B4 (09.02.2012), US 8,147,136 B2 (03.04.2012), US 8,842,356 B2 (23.09.2014)