

**Kurzprofil**  
**Prof. Dr.-Ing. Peter Haring Bolívar**

**Geburtsdatum**

20.03.69

**Schulabschluß 1987**

Deutsches Abitur, Durchschnitt 1.3 (aus 1 bis 6)

Mexikanisches CCH, Durchschnitt 9.22 (aus 10 bis 0)

**1987-1992**

Studium der Elektrotechnik an der RWTH Aachen

**1992 - 1993**

Leiter der Rettungsequipment Abteilung von *Náutica Diesel Europea S.A. de C.V.* in Mexiko-Stadt, Mexiko

**1993 - 1997**

Wissenschaftlicher Mitarbeiter und Dissertation am Institut für Halbleitertechnik II der RWTH Aachen bei Prof. H. Kurz.

- *Heinrich Hertz* Stipendium des Ministeriums für Wissenschaft und Forschung NRW
- Abschluß der Dissertation *mit Auszeichnung*
- *Wilhelm Borchers* Medaille der RWTH Aachen

**1997 - 2001**

Gruppenleiter und Habilitand (C1) am Institut für Halbleitertechnik II der RWTH Aachen

**2001 - 2004**

Oberingenieur (C2) Lehrstuhls und Instituts für Halbleitertechnik der RWTH Aachen.

**2004 - jetzt**

Lehrstuhlinhaber und Professor (C4) für Höchstfrequenztechnik und Quantenelektronik an der Universität Siegen.

• Hochfrequenztechnik

• Optoelektronik

• Optische Nachrichtentechnik

• Terahertz Technologie, Analytik und Bildgebung

• Optische Speicher, Nichtflüchtige Speicher

• Integrierte Optik

• Ultraschnelle Optoelektronik

• THz Biosensorik (EU 6th FP Integriertes Projekt)

• Metamaterials (EU 6th FP Network of Excellence)

• THz Nahfeldsensorik (DFG)

• THz 3D Bildgebung (in Vorbereitung DFG)

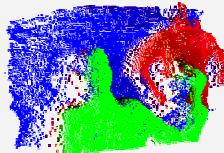
• Seit 2004 Leiter der Fokus Gruppe „THz Technologie“ der European Optical Society

• Seit 2005 Mitglied im NRW Zentrum für Sensorsysteme (ZESS)  
<http://www.hqe.fb12.uni-siegen.de/>

**Aktuelle Vorhaben:**

**Aktuell:**

**Weitere  
Informationen**



## Schriftenverzeichnis Prof. Dr.-Ing. Peter Haring Bolívar

### Patente:

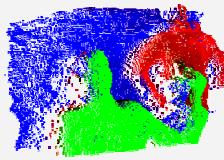
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2. P. Haring Bolívar, M. Nagel, H. Kurz, M. Brucherseifer, A. Bosserhoff und R. Büttner "DNA Detektor", eingereicht beim Europäischen Patentamt Akt. Z. PCT/DE 01/02408.
3. A. Bernds, W. Clemens, P. Haring, H. Kurz und B. Vratzow "Verfahren zur Herstellung leitfähiger Strukturen in organischen elektronischen Bauteilen mit Prägedruckverfahren", eingereicht beim Deutschen Patentamt, Akt Z. 2000P19494.
4. P. Haring Bolívar, F. Merget, D.-H. Kim, H. Kurz, V. Sousa and B. Bechevet, „Laterale Phasenwechsel Speicher“, eingereicht beim Deutschen Patentamt 2003. PCT Verfahren 2004.

### Buchbeiträge:

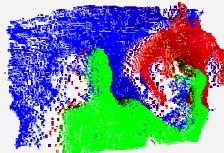
1. P. Haring Bolívar, "Influence of the Coulomb interaction on the coherent and incoherent electronic dynamics in modern optoelectronic materials", ISBN 3-8265-2358-X, (Dissertation, Shaker Verlag, Aachen, 1997).
2. P. Haring Bolívar, „Coherent THz spectroscopy“, chapter 5 in Semiconductor Quantum Optoelectronics: From Quantum Physics to Smart Devices ed. by A. Miller, M. Ebrahimzadeh and D.M. Finlayson, ISBN 0-7503-0628-9, (Institute of Physics Publishing, Bristol, 1999), pp. 151-192.
3. P. Haring Bolívar, T. Dekorsy and H. Kurz, "Optically excited Bloch oscillations -- Fundamentals and Application perspectives", chapter 4 in Intersubband Transitions in Quantum Wells – Physics and Device Applications II, Semiconductors and Semimetals 66, edited by R.K. Willardson and E.R. Weber, volume editors H.C. Liu and F. Capasso, ISBN 0-12-752175-5 (Academic Press, London, 2000), pp. 187-217.
4. P. Haring Bolívar, M. Brucherseifer, H.P.M. Pellemans, and H. Kurz, "Time domain THz spectroscopy and sensing", chapter in THz Sources and Systems, edited by R.E. Miles, et al. (Kluwer Academic Publishers, 2001) 315-328.
5. P. Haring Bolívar, Optical Generation, Chapter II.2 in Generation and Applications of Terahertz Radiation, Ed. M. Chamberlain, and T. Wenckebach, (to be published, Oxford University Press).

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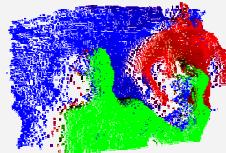
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2. K. Leo, P. Haring Bolívar, G. Maidorn, H. Kurz, K. Köhler, „Ultrafast dephasing in GaAs and GaAs/AlGaAs quantum wells“, Semic. Sci. Technol. 7, B983, (1992).
3. K. Leo, P. Haring Bolívar, F. Brüggemann, R. Schwedler, K. Köhler, „Observation of Bloch Oscillations in a semiconductor superlattice“, Solid State Communications, 84 (10), 943, (1992). (147 mal zitiert)
4. P. Haring Bolívar, P. Leisching, K. Leo, J. Shah, K. Köhler, „Observation of Bloch Oscillations in a semiconductor superlattice“, Ultrafast Electronics and Optoelectronics, 14, 142, (1993).
5. C. Waschke, P. Leisching, P. Haring Bolívar, R. Schwedler, F. Brüggemann, H.G. Roskos, K. Leo, H. Kurz, K. Köhler, „Detection of Bloch Oscillations in a Semiconductor Superlattice by time resolved THz Spectroscopy and Degenerate Four-Wave-Mixing“, Solid State Electronics 37, 1321, (1994).



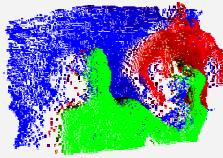
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7. P. Leisching, P. Haring Bolívar, R. Schwedler, K. Leo, H. Kurz, K. Köhler and P. Ganser, „Investigation of Bloch Oscillations in a GaAs/AlGaAs superlattice by transient spectrally-resolved Four-Wave-Mixing“, Semicond. Sci. Technol. 9, 419-421 (1994).
8. P. Leisching, P. Haring Bolívar, W. Beck, Y. Dhaibi, F. Brüggemann, R. Schwedler, H. Kurz, K. Leo and K. Köhler, „Bloch Oscillations of Excitonic Wave-Packets in Semiconductor Superlattices“, Phys. Rev. B 50, 14389, (1994). (72 mal zitiert)
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10. V. Klimov, P. Haring Bolívar, H. Kurz, „Hot phonon effects in femtosecond luminescence spectra of electron-hole plasma in CdS“, Phys. Rev. B 52 (7), 4728 (1995)
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12. P. Haring Bolívar, G. Wegmann, R. Kersting, M. Deussen, U. Lemmer, R.F. Mahrt, H. Kurz, H. Bässler, E.O. Göbel, „Dynamics of excitation transfer in dye doped π-conjugated polymers“, Chem. Phys. Letters. 245, 534-538 (1995).
13. P. Leisching, R. Ott, P. Haring Bolívar, T. Dekorsy, H.J. Bakker, H.G. Roskos, H. Kurz and K. Köhler, „External field induced electric dipole moment of biexcitons in a semiconductor superlattice“, Phys. Rev. B. 52, R16993 (1995).
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15. V. Klimov, P. Haring Bolívar and H. Kurz, „Ultrafast carrier dynamics in semiconductor quantum dots“, Phys. Rev. B 53, 1463 (1996).
16. U. Lemmer, A. Ochse, M. Deussen, R.F. Mahrt, E.O. Göbel, H. Bässler, P. Haring Bolívar, G. Wegmann and H. Kurz, „Energy transfer in molecularly doped conjugated polymers“, Synth. Met. 78, 289 (1996).
17. R.F. Mahrt, P. Haring Bolívar, T. Pauck, G. Wegmann, U. Lemmer, U. Siegner, M. Hopmeier, U. Sherf, K. Müllen, H. Kurz, H. Bässler and E.O. Göbel „Dynamics of optical excitations in a ladder-type π-conjugated polymer containing aggregate states“, Phys. Rev. B 54, 1759 (1996). (75 mal zitiert)
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20. P. Haring Bolívar, F. Wolter, A. Müller, H.G. Roskos, K. Köhler and H. Kurz, „Excitonic emission of THz radiation - experimental evidence for the shortcomings of the Bloch Equation method“, Phys. Rev. Lett. 78, 2232 (1997).
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22. S. Nüsse, P. Haring Bolívar, H. Kurz, F. Levy and A. Chevy, „Femtosecond coherent polariton dynamics in the layered III-VI-semiconductor InSe“, Phys. Rev. B 55, 4620 (1997).
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25. F. Wolter H.G. Roskos, P. Haring Bolívar, G. Bartels, H. Kurz, K. Köhler, H.T. Grahn and R. Hey, „Influence of LO-phonon emission on Bloch Oscillations in Semiconductor Superlattices“, phys. stat. sol. (b) 204, 83 (1997).
26. S. Nüsse, P. Haring Bolívar, V. Klimov, H. Kurz and F. Levy, „Femtosecond study of carrier cooling and exciton formation in the layered III-VI semiconductor GaSe“, phys. stat. sol. (b) 204, 98 (1997).
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29. N. Sekine, K. Yamanaka, K. Hirakawa, M. Vossebürger, P. Haring Bolívar P and H. Kurz, "Observation of terahertz radiation from higher-order two-dimensional plasmon modes in GaAs/AlGaAs single quantum wells", Applied Physics Letters 74, 1006 (1999).
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36. M. Nagel, T. Dekorsy, M. Brucherseifer, P. Haring Bolívar and H. Kurz, Characterization of polypropylene thin-film microstrip lines at millimeter and submillimeter wavelengths, Microw. Opt. Techn. Lett. 29, 97-100 (2001).
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38. S. Kyrsta, R. Cremer, D. Neuschütz, M. Laurenzis, P. Haring Bolívar, H. Kurz, Deposition and characterization of Ge-Sb-Te layers for applications in optical data storage, Appl. Surf. Sc. 179, 55-60 (2001).
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44. R. Gonzalo, B. Martinez, C.M. Mann, H.P.M. Pellemans, P. Haring Bolívar, and P. de Maagt, A Low-Cost Fabrication Technique for Symmetrical and Asymmetrical Layer-by-Layer Photonic Crystals at Submillimeter-Wave Frequencies, *IEEE Trans. on Microw. Theory and Techn.* 50, 2384 (2002). doi:10.1109/TMTT.2002.803446
45. P. Haring Bolívar, M. Brucherseifer, J. Gómez Rivas, R. Gonzalo, I. Ederra, A. Reynolds, M. Holker, P. de Maagt, Measurement of the Dielectric Constant and Loss Tangent of High Dielectric Constant Materials at Terahertz Frequencies, *IEEE Trans. on Microw. Theory and Techn.* 51, 1062 (2003). doi:10.1109/TMTT.2003.809693
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52. M. Zedler, C. Janke, P. Haring Bolívar, H. Kurz and H. Künzel, "Improved coherent THz emission by modification of the dielectric environment", *Appl. Phys. Lett.* 83, 4196-4199 (2003). doi:10.1063/1.1628400
53. M. Laurenzis, M. Först, P. Haring Bolívar, and Heinrich Kurz, "Influence of hot carrier diffusion on the density limitation of optical data storage", *Jap. J. of Appl. Phys.* 43 (7B), 4700-4703 (2004). <http://jjap.ipap.jp/link?JJAP/43/4700/>
54. P. Haring Bolívar, M. Nagel, F. Richter, M. Brucherseifer, H. Kurz, A. Bosserhoff und R. Büttner, "Label-free THz sensing of genetic sequences: towards 'THz biochips' ", *Phil. Trans. Roy. Soc. Lond. A* 362, 323 - 335 (2004). doi:10.1098/rsta.2003.1318
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56. C. Janke, J. Gómez Rivas, C. Schotsch, L. Beckmann, P. Haring Bolívar, and H. Kurz, "Optimization of enhanced terahertz transmission through arrays of subwavelength apertures", *Phys. Rev. B* 69, 205314 (2004). doi:10.1103/PhysRevB.69.205314
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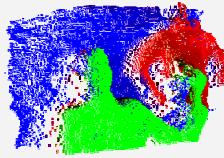


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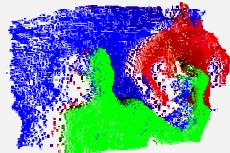
### **Eingeladene internationale Konferenzbeiträge**

1. P. Leisching, C. Waschke, P. Haring Bolívar, W. Beck, H. Kurz, H.G. Roskos, K. Leo, K. Köhler, „Bloch Oscillations in Semiconductor Superlattices: Physics and Application Perspectives“, International Semiconductor Device Research Symposium '93, 1, 85, (1993).
2. P. Haring Bolívar, „Coherent THz spectroscopy“, in NATO Advanced Study Institute on Semiconductor Quantum Optoelectronics: From Quantum Physics to Smart Devices, Fiftieth Scottish Universities Summer School in Physics, St Andrews, United Kingdom, June 1998.
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4. P. Haring Bolívar, R. Martini, and H. Kurz, "Pulsed optical THz technology --- generation and amplification of coherent THz radiation", Proc. SPIE Vol. 3828, p. 228-233, Terahertz Spectroscopy and Applications II, J. M. Chamberlain; Ed. (1999).
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