RESUME

PERSONAL DATA:

Last Name: Liu
First Name: Na (female)
Date of Birth: 04/04/1979
Place of Birth: Liaoning, China

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EDUCATION:

2010	Postdoc, Department of Chemistry and Lawrence Berkeley National Lab, University of California at Berkeley, USA
2005-2009	University of Stuttgart, Germany 4th Physics Institute, Ph.D. in Physics (summa cum laude), 7/2009.
2003-2005	Hongkong University of Science and Technology, Hongkong Physics Department, M.S in Physics
2001-2003	Peking University, China Physics Department, Research Assistant
1997-2001	Jilin University, China Physics Department, B. S. in Physics

RESEARCH EXPERIENCE:

Department of Chemistry and Lawrence Berkeley National Lab, University of California, Berkeley, USA, (2010)

Advisor: Professor A. Paul Alivisatos
Bottom-Up Synthesis of Hybrid Structures:
Synthesis of Nanocolloidal Semiconductors, Synthesis of Metallic Nanoparticles, Synthesis of Hybrid Nanoparticles using DNA linkers, Chiral colloidal metamaterials, Colloidal nanoparticle scaffolds for sensing applications

University of Stuttgart (2005-2009)

Thesis Advisor: Professor Harald Giessen
Three-dimensional metamaterials:
Experimental demonstration of the first three-dimensional optical metamaterials. First experimental demonstration of magnetic plasmon hybridization in three-dimensional

metamaterials. Detailed studies on the coupling effects in optical metamaterials and the potential applications of optical metamaterials for bio-sensing. First experimental demonstration of stereoscopic effects of three-dimensional metamaterials. First experimental demonstration of electromagnetically induced transparency in metamaterials.

HongKong University of Science and Technology (2003-2005)

Thesis Advisor: Professor George K L Wong
Ordered ZnSe nanowire arrays grown on GaAs (111) substrate by molecular beam epitaxy:
Design, fabrication, and optical characterization of ZnSe nanowires

HONORS:

- Excellent Student of Changchun City (2000)
- Model of Excellent Student leaders of Jilin University, Model of Excellent Students of Jilin University (1997-2000)
- Chinese Government Award for Outstanding Students Abroad (2008), 3500 EUR
- Hertha-Sponer Prize of the Deutsche Physikalische Gesellschaft (2010) 3000 EUR

TEACHING EXPERIENCE:

- Experimental mentor for Wave Optics and Semiconductor Laser (Lab)
- Teaching assistant for Waveguide Optics and Solid State Physics (Classes)

TECHNICAL ABILITIES:

Electron beam lithography, Electron-beam evaporation, Thermal evaporation, Ion-beam etching, CST Microwave Studio simulations.

SELECTED PUBLICATIONS:

- N. Liu and H. Giessen, *Three-dimensional optical metamaterials*, invited paper, Angewandte Chemie International Edition, in press (2010).
- N. Liu, T. Weiss, M. Mesch, L. Langguth, U. Eigenthaler, M. Hirscher, C. Sönnichsen, and H. Giessen, *Planar metamaterial analog of electromagnetically induced transparency for plasmonic sensing,* Nano Lett., in press (2010).

- N. Liu, L. Langguth, T. Weiss, J. Kästel, M. Fleischhauer, T. Pfau, and H. Giessen, *Plasmonic electromagnetically induced transparency in metamaterials,* Nature Materials **8**, 758 (2009).

- N. Liu, H. Liu, S. Zhu, and H. Giessen, *Stereometamaterials*, Nature Photonics **3**, 157 (2009).

- N. Liu and H. Giessen, *Three-dimensional optical metamaterials as model systems for longitudinal and transverse magnetic coupling*, Optics Express **16**, 21233 (2008).

- N. Liu, S. Kaiser, and H. Giessen, *Magnetoinductive and Electroinductive Coupling in Plasmonic Metamaterial Molecules*, Advanced Materials **20**, 4521 (2008).

- N. Liu, L. Fu, S. Kaiser, H. Schweizer, and H. Giessen, *Plasmonic building blocks for magnetic molecules in three-dimensional metamaterials*, Advanced Materials **20**, 3859 (2008).

- N. Liu, H. Guo, L. Fu, S. Kaiser, H. Schweizer, and H. Giessen, *Three-dimensional photonic metamaterials at optical frequencies*, Nature Materials **7**, 31 (2008).

- N. Liu, H. Guo, L. Fu, H. Schweizer, S. Kaiser, and H. Giessen, *Plasmon hybridization in stacked cut-wire metamaterials*, Advanced Materials 19, 3628 (2007).

- N. Liu, H. Guo, L. Fu, H. Schweizer, S. Kaiser, and Harald Giessen, *Electromagnetic resonances in single and double split-ring resonator metamaterials in the near infrared*, Phys. stat. sol. (b) 244, 1251 (2007).

- H. Guo, T.P. Meyrath, T. Zentgraf, N. Liu, L. Fu, H. Schweizer, and H. Giessen, *Optical resonances of bowtie slot antennas and their geometry and material dependence*, Opt. Express 16, 7756-7766 (2008).

- L. Fu, H. Schweizer, H. Guo, N. Liu, and H. Giessen, *Synthesis of transmission line models for metamaterial slabs at optical frequencies*, Phys. Rev. B 78, 115110 (2008).

- H. Guo, N. Liu, L. Fu, T. P. Meyrath, T. Zentgraf, H. Schweizer, and H. Giessen, *Resonance hybridization in double split-ring resonator metamaterials*, Opt. Express 15, 12095 (2007).

- H. Schweizer, L. Fu, H. Gräbeldinger, H. Guo, N. Liu, S. Kaiser, and H. Giessen, *Negative permeability around 630 nm in nanofabricated meander metamaterials*, Phys. stat. sol. (a) 204, 3886 (2007).

- H. Schweizer, L. Fu, H. Gräbeldinger, H. Guo, N. Liu, S. Kaiser, and H. Giessen, *Longitudinal Capacitance Design for Optical Left-Handed Metamaterials*, Phys. stat. sol. (b) 244, 1243 (2007).

- H. Guo, N. Liu, L. Fu, H. Schweizer, S. Kaiser, and H. Giessen, *Thickness dependence of the optical properties of split-ring resonator metamaterials*, Phys. stat. sol. (b) 244, 1256 (2007).

- L. Fu, H. Schweizer, H. Guo, N. Liu, and H. Giessen, *Analysis of Metamaterials using Transmission Line Models*, Appl. Phys. B 86, 425 (2007).

- C. Rockstuhl, T. Zentgraf, H. Guo, N. Liu, C. Etrich, I. Loa, K. Syassen, J. Kuhl, F. Lederer, and H. Giessen, *Resonances of split-ring resonator metamaterials in the near infrared*, Appl. Phys. B 84, 219 (2006).

At international conferences (only own presentations):

- N. Liu, M. Mesch, T. Weiss, and H. Giessen, *Plasmonic EIT analog in planar metamaterials*, Talk, META ,2010, Cairo, Egypt
- N. Liu, L. Langguth, T. Weiss, J. Kästel, M. Fleischhauer, T. Pfau, and H. Giessen, *Plasmonic electromagnetically induced transparency in* metamaterials, Talk, 3rd International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, London, UK (2009).
- N. Liu and H. Giessen, *Stereometamaterials*, Poster, Surface Plasmon Photonics 4, Amsterdam, The Netherlands (2009).
- N. Liu and H. Giessen, *Three-dimensional optical metamaterials as model systems for longitudinal and transverse magnetic coupling*, Invited talk, MORIS, Awaji-island, Hyogo, Japan (2009).
- N. Liu, H. Liu, S. Zhu, and H. Giessen, *Stereometamaterials*, Talk, CLEO/QELS Baltimore, USA (2009).
- N. Liu, H. Liu, S. Zhu, and H. Giessen, *Plasmonic EIT in metamaterials*, Postdeadline talk, CLEO/QELS Baltimore, USA (2009).
- N. Liu, H. Liu, S. Zhu, and H. Giessen, *Stereometamaterials*, Talk, PECS VIII, Sydney, Australia (2009).
- N. Liu, H. Liu, S. Zhu, and H. Giessen, *Stereometamaterials*, Talk, Hongkong University of Science and Technology, Department of Physics (2009).
- N. Liu and H. Giessen, *Three-dimensional optical metamaterials*, Invited talk, IFW, University of Dresden, Germany (2009)
- N. Liu, H. Liu, S. Zhu, and H. Giessen, *Stereometamaterials*, Talk, Nanometa, Seefeld, Austria (2009).
- N. Liu and H. Giessen, *Stereometamaterials*, Poster, 2nd SSLS Workshop, National University at Singapore (2008).
- N. Liu and H. Giessen, *Stereometamaterials*, Invited talk, Nanjing University, Nanjing, China (2008).

- N. Liu and H. Giessen, *Stereometamaterials*, Talk, Dept. of Electrical Engineering, University of Pennsylvania, Philadelphia, USA (2008).
- N. Liu, H. Liu, S. Zhu, and H. Giessen, *Stereometamaterials*, Postdeadline talk, OSA Annual meeting, Rochester, NY, USA (2008).
- N. Liu, S. Kaiser, and H. Giessen, *Magnetoinductive and Electroinductive Coupling in Plasmonic Metamaterial Molecules*, Talk, 2nd International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Pamplona, Spain (2008).
- N. Liu and H. Giessen, *Electromagnetically induced transparency in Optical Metamaterials*, Postdeadline talk, CLEO/QELS San Jose, USA (2008).
- N. Liu and H. Giessen, *Three-dimensional optical metamaterials*. Invited talk, CLEO/QELS San Jose, USA (2008).
- N. Liu and H. Giessen, *Three-dimensional optical metamaterials*. Talk, SPIE, Strasbourg, France (2008).
- N. Liu and H. Giessen, *Three-dimensional optical metamaterials*. Talk, PIERS, Hangzhou, China (2008).
- N. Liu, H. Guo, L. Fu, S. Kaiser, H. Schweizer, and H. Giessen, *Three-dimensional photonic metamaterials at optical frequencies*, Talk, 1st International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Rome, Italy (2007).
- N. Liu, H. Guo, L. Fu, H. Schweizer, S. Kaiser, and H. Giessen, *Plasmon hybridization in stacked cut-wire metamaterials*, Poster, Nanometa, Seefeld, Austria (2007).