Frank Zirkelbach

Personal Data

Place and Date of Birth:	Berlin, Germany — 17 November 1977
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Work Experience

Sep 2014 - present	**Computer scientist** GIS/NIS Division, LEW Verteilnetz GmbH, Augsburg
Mar 2012 - Feb 2014	**Research assistant (Postdoc)** Max Planck Institute for Solid State Research Stuttgart
Jan 2006 - Jan 2012	**Research assistant & Doctoral candidate** Physics Department, University of Augsburg
Jul 2009 - Dec 2009	**Research scientist** Physics Department, University of Paderborn

Basic education and national service

Sep 1988 - Jul 1998	**Grammar school** Justus-von-Liebig-Gymnasium, Neusäß Holbein-Gymnasium, Augsburg
Sep 1984 - Jul 1988	**Elementary school** Ernst-Habermann-Grundschule, Berlin, Wilmersdorf
Aug 1998 - Sep 1999	**Alternative civilian service** Hessing-Klinik, Augsburg

Scientific education

Jan 2006 - Jan 2012	**Doctoral studies in physics** Physics Department, University of Augsburg Thesis: *Atomistic simulation study on silicon carbide precipitation in silicon*
Jul 2009 - Jan 2012	**Scientific collaboration with the University of Paderborn** Theoretical Physics, Physics Department
Jan 2006 - Dec 2008	**Scholarship student** Bayerische Forschungsstiftung
Oct/Nov 2007 Aug/Sep 2008	**Research period at the University of Helsinki** Division of Materials Physics, Department of Physics
Oct 1999 - Dec 2005	**Studies in physics** Physics Department, University of Augsburg Thesis: *Monte-Carlo-Simulation von selbstorganisierten nanometrischen SiC_x-Ausscheidungen in C^+-implantierten Silizium*

List of publications

[1] F. Zirkelbach, P.-Y. Prodhomme, P. Han, R. Cherian, and G. Bester
Large-scale atomic effective pseudopotential program including an efficient spin-orbit coupling treatment in real space
Phys. Rev. B **91**, 075119 (2015).

[2] F. Zirkelbach, B. Stritzker, K. Nordlund, W. G. Schmidt, E. Rauls, and J. K. N. Lindner
First-principles and empirical potential simulation study of intrinsic and carbon-related defects in silicon
phys. status solidi (c) **9**, 1968 (2012).

[3] F. Zirkelbach, B. Stritzker, K. Nordlund, J. K. N. Lindner, W. G. Schmidt, and E. Rauls
Combined *ab initio* and classical potential simulation study on silicon carbide precipitation in silicon
Phys. Rev. B **84**, 064126 (2011).

[4] F. Zirkelbach, B. Stritzker, K. Nordlund, J. K. N. Lindner, W. G. Schmidt, and E. Rauls
Defects in carbon implanted silicon calculated by classical potentials and first-principles methods
Phys. Rev. B **82**, 094110 (2010).

[5] F. Zirkelbach, J. K. N. Lindner, K. Nordlund, and B. Stritzker
Molecular dynamics simulation of defect formation and precipitation in heavily carbon doped silicon
Mater. Sci. Eng., B **159-160**, 149 (2009).

[6] F. Zirkelbach, M. Häberlen, J. K. N. Lindner, and B. Stritzker
Monte carlo simulation study of a selforganisation process leading to ordered precipitate structures
Nucl. Instr. and Meth. B **257**, 75 (2007).

[7] F. Zirkelbach, M. Häberlen, J. K. N. Lindner, and B. Stritzker
Monte-carlo simulation study of the self-organization of nanometric amorphous precipitates in regular arrays during ion irradiation
Nucl. Instr. and Meth. B **242**, 679 (2006).

[8] F. Zirkelbach, M. Häberlen, J. K. N. Lindner, and B. Stritzker
Modelling of a selforganization process leading to periodic arrays of nanometric amorphous precipitates by ion irradiation
Comp. Mater. Sci. **33**, 310 (2005).

Computer literacy

Operating systems	Linux, Unix, Windows, OS X (ordered by competence)
Programming	C, Fortran, RISC Assembler (Atmel AVR, Mips), VHDL
High Performance Computing	POSIX Threads, OpenMP, MPI, LoadLeveler, Grid Engine
Object oriented programming	C++, Javascript, Go, Lua
Scripting	Bash, Sed, Awk, Make
Revision control	Git, CVS, SVN
Text, Layout & Graphics	LaTeX, GNUPlot, Gimp, XFig, Inkscape, Openoffice, Povray
Science	VASP, ABINIT, Quantum-Espresso, Fhi98PP, APE, VMD
Scale-out & virtualization	CEPH, Proxmox VE, KVM, qemu
Monitoring	Nagios, CheckMK
Others	Eagle (PCB Design), Xilinx ISE (VHDL Design), GDB

Knowledge of languages

German	Native language
English	Excellent
French	Basic knowledge

Leisure activities

Hiking, Trekking, Basketball, Volleyball	Sports
Blackbox reversing, Hardware and logic designs	Technical
Social-scientific texts	Reading