

CV — Jonas Fransson

Ph.D. degree: (2002) *physics*; thesis — Non-orthogonality and Electron Correlations in Nanotransport. Spin- and Time-Dependent Currents; supervisor — **Börje Johansson**.

Docent: (2006) in *Atomic, molecular, and condensed matter physics* at Uppsala University.

Achievements: I have developed a diagrammatic Green function approach to treat nanoscale many-body systems under non-equilibrium conditions [4,17] (Publications list). Established a theory for asymmetries and negative differential conductance generated by strong electron correlations in nanoscale systems [8,11,13]. Successfully provided a theoretical description and explanation for the so-called *Pauli exclusion principle spin blockade* in double quantum dot systems [19].

In average I have published six peer reviewed papers annually since 2004. In total I have published 29 peer reviewed papers which are cited ~ 130 times - my *h* index is currently 7.

Sources: ISI Web of Knowledge, APS, and IOP.

Present position:

Senior Researcher (VR Rådsforskare) in Theory for Strongly Correlated Materials, Department of Physics and Materials Science, Uppsala University.

Postdoc.:

2006 — 2007, (Mar. -06 — Jul. -07) Theoretical Division and Center for Nonlinear Studies (CNLS), Los Alamos National Laboratory (LANL), Los Alamos, USA. The position was sponsored by **A. V. Balatsky** (T-11, LANL) and **A. M. N. Niklasson** (T-1, LANL).

2006, (Jan. — Mar.) Physics Department, Uppsala University, Uppsala.

2005, Department of Materials Science and Engineering, KTH, Stockholm — Carl Trygger's Foundation.

2004, Department of Materials Science and Engineering, KTH, Stockholm.

2003, Physics Department, KTH, Stockholm.

2003 - 2005, Guest researcher at NORDITA, Copenhagen.

Former employments and appointments:

2007 (Aug. — Dec.) Patent Attorney Trainee, Awapatent AB, Stockholm. — Ph.D. student at the Physics Department Uppsala University, May 1997 to Nov. 2002.

— Assistant researcher, Physics Department, Uppsala University, Nov./Dec. 2002.

— Invited guest researcher, Department of Electrical Engineering and Center for Solid State Electronics Research, Arizona State University (ASU), Tempe, USA, Feb. 2002.

— Invited guest researcher, Theoretical Division, LANL, Los Alamos, USA, Feb. 2002.

— Invited guest researcher, Department of Electrical Engineering and Center for Solid State Electronics Research, ASU, Tempe, USA, Feb. 2003.

— Invited guest researcher, Theoretical Division, LANL, Los Alamos, USA, June 2004.

— Invited guest researcher, Theoretical Division, LANL, Los Alamos, USA, June 2005.

— Invited guest researcher, Theoretical Division, LANL, Los Alamos, USA, Sep. 2005.

— Invited guest researcher, Adam Mickiewicz University Poznań, Poland, Jan. 2006.

Professional preparation:

— Lund's Institute of Technology (LTH), Lund's University, Engineering Physics Program (M.Sc.), 1992-1993.

- Uppsala University, Master of Science in Engineering Physics, 1997.
- Uppsala University, Mathematics (additional courses), 1993-1999.
- Technische Universiteit Eindhoven, Mathematics, 1996.
- Uppsala University, Physics Department, Licentiate degree in Physics, 1999.
- Uppsala University, Physics Department, Ph.D. degree in Physics, 2002.

Paternity leave:

- 1 April to 31 August in 1998 with my daughter Eugenia, 1 November 1999 to 31 March 2000 with my son Elmer, and 15-31/12 2002 with both children.

Awards: Bjurzons premium — for excellent Ph.D. thesis 2002/2003, Uppsala University.

Supervisor:

- Fall term of 2004: Supervising M. Råsander for a undergraduate diploma thesis project on Blockade Phenomenon in Double Quantum Dots. The thesis was successfully finalized in January 2005, and subsequently published in Physical Review B [19].
- During the academic year 2001-2002, I supervised an undergraduate student (P. Leitz) in the course *Fysikens Världsbild, 5p* at Uppsala University. The aim was to create a connection between undergraduate students and researchers. The course included scientific discussions, project works and a final public poster presentation.

Conferences, Symposia, Workshops —

I have participated in more than 40 international conference and workshops, at which I have presented talks and poster at more than 25. In addition, I have given invited lectures at:

- *Adam Mickiewicz University Poznań*, January 2006, Poznań, Poland.
- *Los Alamos National Laboratory*, June 2004, Los Alamos, NM, USA
- *Winter Workshop on the Electronic Structure of Light Actinides*, **invited talk**, May 2004, Riksgränsen, Sweden.
- *Quantum Transport Nano-Hana International Workshop*, **invited talk**, March 2004, Chiba, Japan.
- *1st Nanoquanta-Øresund Workshop on Many-Body Quantum Transport*, **invited talk**, January 2004, Lund, Sweden.
- *NORDITA*, **invited talk**, January 2003, Copenhagen, Denmark.
- *Quantum Magnetic Dots, Midterm Review Network Meeting*, **invited talk**, Wiiks Slott, September 2002, Uppsala, Sweden.
- *Los Alamos National Laboratory*, February 2002, Los Alamos, NM, USA
- *Arizona State University*, February 2002, Tempe, AZ, USA.

Scholarships/grants — *selected among 12 received; reverse chronological order:*

- *Carl Trygger Foundation* — grant 2004, SEK 240 000 for post doctoral research studies at the Department of Materials Science and Engineering, KTH.
- *STINT* — scholarship 2003, for travel, living expenses in visiting Prof. Jonathan Bird Department of Electrical Engineering and Center for Solid State Electronics Research, Arizona State University, Tempe, USA
- *A.M. Lundin* — scholarship 2001, for travel, living expenses and participation at *Advanced Research Workshop on Quantum Transport in Semiconductors*, Maratea, Italy.
- *A.M. Lundin* — scholarship 2000, for travel, living expenses and participation at *NATO Advanced Researcher Workshop on Size Dependent Magnetic Scattering*, Pécs, Hungary.

Professional activities: Annually I referee around 10 — 15 papers submitted to the Phys. Rev. Lett. and Phys. Rev. B, Physica B, Physica E and Int. J. Quantum Chem.

Miscellaneous: Interviewed for the *60 seconds with ... Authors Edition* 2006, IOP. The interview was a result of the publication of *Asymmetric negative differential conductance in double quantum dots*, Journal of Physics: Condensed Matter (Letter to the Editor) **16** L85 (13 February 2004); IOP Select, see Ref. [8] in Publications list.

Webpage: http://www.iop.org/ej/authors_edition/