



# Curriculum Vitae

## HRZZ Form

### PERSONAL INFORMATION

Name and surname **Silvia Tomić**  
 Academic title Dr.  
 Year and institution of PhD obtained 1986.; Laboratoire de Physique des Solides, Université Paris-Sud  
 Address Bijenička 46, HR-10000 Zagreb  
 Phone 1 46 98 820  
 Fax 1 46 98 889  
 E-mail stomic@ifs.hr  
 Personal web page [http://real-science.ifs.hr/wiki/Silvia\\_Tomic](http://real-science.ifs.hr/wiki/Silvia_Tomic)  
 Citizenship Croatian  
 Date and place of birth 22 January 1953, Zagreb

### WORK EXPERIENCE<sup>1</sup>

(CHRONOLOGICALLY\*)

Date (from – until) 2002-today  
 Institution Institute of Physics  
 Position Senior Research Advisor  
 Work field Natural sciences; Physics; Condensed Matter Physics: Charge and Spin Orders and Dynamics in Transition Metal Oxides and Organic Superconductors; 2D Organic Superconductivity; Structure and Dynamics of Bio-Polyelectrolytes

### WORK EXPERIENCE<sup>2</sup>

(CHRONOLOGICALLY\*)

Date (from – until) 1999-2002  
 Institution Institute of Physics  
 Position Research Advisor  
 Work field Natural sciences; Physics; Condensed Matter Physics: Layered Organic Superconductors, Dynamics of Charge and Spin Orders in Commensurate and Incommensurate quasi-one-dimensional materials

### WORK EXPERIENCE<sup>3</sup>

(CHRONOLOGICALLY\*)

Date (from – until) 1991-1999  
 Institution Institute of Physics  
 Position Senior Research Associate  
 Work field Natural sciences; Physics; Condensed Matter Physics: Charge and Spin Density Waves and Superconductivity in Organic Quasi-One-Dimensional Conductors and Superconductors: Influence of Disorder on the Electrical Transport and Ground State, Influence of Magnetic Field and Pressure on Transport, Dynamics and Stability of Phases;

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\* all information in the document should be entered chronologically – from the most recent to the oldest

<sup>2 2 3</sup> Please add rows to enter all required information

\* all information in the document should be entered chronologically – from the most recent to the oldest

<sup>3 2 3</sup> Please add rows to enter all required information

\* all information in the document should be entered chronologically – from the most recent to the oldest

## Non-linear Effects

**WORK EXPERIENCE<sup>4</sup>**  
(CHRONOLOGICALLY\*)

Date (from – until) 1986-1991  
 Institution Institute of Physics  
 Position Research Associate  
 Work field Natural sciences; Physics; Condensed Matter Physics: Linear and Non-linear Transport in the Spin-Density Wave Phase; Influence of Disorder on the Non-linear Transport; Influence of Pressure on the Phase Diagram of the Quasi-One-Dimensional Conductors

**WORK EXPERIENCE<sup>5</sup>**  
(CHRONOLOGICALLY\*)

Date (from – until) 1977-1981  
 Institution Institute of Physics  
 Position Research Assistant  
 Work field Natural sciences; Physics; Condensed Matter Physics: Research in Calorimetric Properties of the Phase Transitions in Inorganic Quasi-One-Dimensional Conductors

**EDUCATION<sup>6</sup>**  
(CHRONOLOGICALLY)

Date 1981-1986  
 Place Orsay, France  
 Institution Laboratoire de Physique des Solides, Université Paris-Sud  
 Title of qualification awarded Docteur en Sciences Physiques, these d'état

**EDUCATION<sup>7</sup>**  
(CHRONOLOGICALLY)

Date 1977-1981  
 Place Zagreb  
 Institution Postgraduate study of Solid State Physics at the Faculty of Science, University of Zagreb  
 Title of qualification awarded Master of Science

**EDUCATION<sup>8</sup>**  
(CHRONOLOGICALLY)

Date 1971-1977  
 Place Zagreb  
 Institution Faculty of Science, University of Zagreb  
 Title of qualification awarded Graduated Engineer in Physics (Bachelor in Physics)

**TRAINING**  
(CHRONOLOGICALLY)

Year 1987; one-year

<sup>4 2 3</sup> Please add rows to enter all required information

\* all information in the document should be entered chronologically – from the most recent to the oldest

<sup>5 2 3</sup> Please add rows to enter all required information

\* all information in the document should be entered chronologically – from the most recent to the oldest

Place Orsay, France  
 Institution Laboratoire de Physique des Solides, Université Paris-Sud  
 Subject and skills covered Natural sciences; Physics; Condensed Matter Physics: Organic Conductors and Superconductors; Experimental Low Temperature Physics

**LANGUAGES**

**MOTHER TONGUE** Croatian  
**ENGLISH LANGUAGE**  
 Speaking Fluent  
 Writing Excellent  
 Reading Excellent

**OTHER FOREIGN LANGUAGES<sup>9</sup>**

Language French  
 Speaking Fluent  
 Writing working knowledge  
 Reading Excellent

**OTHER FOREIGN LANGUAGES<sup>10</sup>**

Language German  
 Speaking Basic proficiency  
 Writing Working knowledge  
 Reading Working knowledge

**RESEARCH AND OTHER PROJECTS**

(CHRONOLOGICALLY; LEADER AND ASSOCIATES; FUNDING SOURCE)

- "Frequency-Dependent Conductivity of Charge Ordering Phases of Two-Dimensional Organic Metals: Search for the Anisotropic Dispersion and Collective Excitations", leaders: Silvia Tomić (IPhyZg) and Martin Dressel (1.Physikalisches Institut, Universität Stuttgart); (1.1.2008 – 31.12.2010); associates: B. Korin-Hamzić (IPhyZg), T. Vuletić (IPhyZg), T. Ivek (IPhyZg), N.Drichko (UniStuttgart), B.Gorshunov (UniStuttgart), C.Clauss (UniStuttgart), D.Schweitzer (UniStuttgart); Deutsche Forschungsgemeinschaft (DFG) project DR 228/29-1
- "Strongly correlated inorganic, organic and biomaterials" 035-0000000-2836; leader: Silvia Tomić (2007-2011); associates: Sanja Dolanski Babić (MSUniZg), Bojana Korin-Hamzić (IPhyZg), Tomislav Ivek (IPhyZg), Tomislav Vuletić (IPhyZg), Matija Čulo (IPhyZg), Danijel Grgičin (IPhyZg); MSES
- "Broad-Band Optical Spectroscopy of Low-Dimensional Quantum Spin Systems"; leaders Martin Dressel and Boris Gorshunov (1.Physikalisches Institut, Universität Stuttgart); (1.2.2003. – 31.1.2005); Deutsche Forschungsgemeinschaft (DFG); associates: S.Tomic (IPhyZg), T.Vuletić (IPhyZg), B.Korin-Hamzić (IPhyZg)
- "Systems of reduced dimensionality: from synthetic organic to bio-materials" 0035015; leader: Silvia Tomić (2002-2006); associates: Sanja Dolanski Babić (MSUniZg), Bojana Korin-Hamzić (IPhyZg), Tomislav Vuletić (IPhyZg), Tomislav Ivek (IPhyZg), M.Pinterić (IPhyZg), MSES
- "Dynamical and conformational properties of native DNA in varying chemical environment", 1.5.2002.- 30.4.2004); leader: Silvia Tomić (IPhyZg) and 3.Physikalisches Institut, Universität Stuttgart (J.U.von Schütz); associates: T. Vuletić (IPhyZg), Sanja Dolanski Babić (MSUniZg); project in the framework of bilateral collaboration with Germany
- "Frequency-dependent conductivity of commensurate density waves in organic metals: a search for the pinned mode", leaders: Silvia Tomić (IPhyZg) and M.Dressel (1.Physikalisches Institut, Universität Stuttgart); (1.11.2001 – 31.12.2002); associates: B. Korin-Hamzić (IPhyZg), T. Vuletić (IPhyZg), M.Pinterić (IPhyZg); Deutsche Forschungsgemeinschaft (DFG) project 436 KRO 113/5/0-1
- "The nature of the low temperature density wave, its pinning and the superconducting

ground state in anisotropic radical ion salts", (1999-2001); leader: Silvia Tomić (IPhyZg) and 3.Physikalisches Institut, Universität Stuttgart (J.U.von Schütz, D.Schweitzer); associates: B. Korin-Hamzić (IPhyZg), T. Vuletić (IPhyZg), M.Pinterić (IPhyZg); project in the framework of bilateral collaboration with Germany

- "Novel electronic states in molecular conductors" 00350103, leader: Silvia Tomić (1996-2002); associates: B.Korin-Hamzić (IPhyZg), N.Biškup (IPhyZg), T. Vuletić (IPhyZg), M.Pinterić (IPhyZg); MSES
- "Collective charge response of charge density waves and antiferromagnetic phases in organic metals", (1995-1998); leader: Silvia Tomić (IPhyZg) and 3.Physikalisches Institut, Universität Stuttgart (J.U.von Schütz, D.Schweitzer); associates: N.Biškup (IPhyZg), Sanja Dolanski Babić (MSUniZg), Bojana Korin-Hamzić (IPhyZg), M.Pinterić (IPhyZg); project in the framework of bilateral collaboration with Germany
- "Organic metals: electrical transport in high-temperature phase and in the ground state (antiferromagnetic and superconducting)", (1995-1997); leader: Silvia Tomić (IPhyZg), Laboratoire de Physique des Solides, Université Paris-Sud (D.Jérôme); project in the framework of collaboration between CNRS and Croatia
- "Single-Particle and Collective Mechanism for the Electrical Conductivity in Organic Conductors", (1992-1994); leader: Silvia Tomić (IPhyZg), Laboratoire de Physique des Solides, Université Paris-Sud (D.Jérôme); project in the framework of collaboration between CNRS and Croatia
- "Organic Conductors and Superconductors", (1991-1994); proposal leader: John Cooper, leader: Silvia Tomić (IPhyZg), Université Paris-Sud, University of Copenhagen, University of Stuttgart; EEC projekt CI1-CT90-0863 (CD)
- "Novel anisotropic conductors and superconductors", leader: Silvia Tomić (IPhyZg) (1991-1996); MSES
- "Synthetic conductors and superconductors"; leader: John Cooper (IPhyZg), leader: Silvia Tomić (IPhyZg) (1989-1991); MSES

#### TEACHING

(CHRONOLOGICALLY; UNDERGRADUATE, GRADUATE , POSTGRADUATE STUDY PROGRAMMES)

- „Structure and interactions in polyelectrolytes: basic theory and experimental verification“, Elective course at the Postgraduate Study in Biophysics at the University of Split (since 2008)
- „Exercises in solid state physics“ at graduate study of physics at the Faculty of Science, University of Zagreb (2 terms, 1978-1979.)
- "Laboratory exercises in general physics" at graduate study of physics at the Faculty of Science, University of Zagreb (2 terms, 1977-1978.)

#### MENTORSHIP OF DEFENDED DOCTORAL AND MASTER DISSERTATIONS AND TRAINING OF YOUNG RESEARCHERS AND SCIENTISTS

(CHRONOLOGICALLY)

**DOCTORAL THESES**

- T.Ivek: «Charge orderings in strongly correlated systems», mentor: Silvia Tomić, Faculty of Science, University of Zagreb (30 June 2011.)
- S.Dolanski Babić: "Electric and Dielectric Properties of genomic DNA Aqueous Solutions", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (16 October 2008.)
- T.Vuletić: «Collective electronic states of new quasi-one-dimensional materials», mentor: Silvia Tomić, Faculty of Science, University of Zagreb (15 October 2004.)
- M.Pinterić: ""Electronic properties of the superconducting and density wave phases in organic anisotropic materials", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (14 March 2003)
- N.Biškup: "Single-Particle and Collective Electrical Transport in Bechgaard Salts", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (1996).

**MASTER OF SCIENCES THESES**

- S.Dolanski Babić: "Influence of Disorder on the Electron Gas Properties in Organic Anisotropic systems", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (8 April 2002).
- M.Pinterić: "Low-Frequency Dielectric Spectroscopy and Non-linear Electrical Transport of Spin Density Wave", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (31 March 2000).

**DIPLOMA THESES**

- I.Kovačević: „Electrical Transport in the Charge Ordered Phase of the Organic Conductor  $\alpha$ -(BEDT-TTF)<sub>2</sub>I<sub>3</sub>, mentor: Silvia Tomić, Faculty of Science, University of Zagreb (13 July 2011)
- D.Grgičin: "Electrical Conductivity of Sodium salt hyaluronic acid solutions", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (9 November 2009)
- Z.Gregurić: "Dielectric relaxation of hyaluronic acid aqueous solutions", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (11 July 2008)
- A.Vojvodić: „Dielectric relaxation of colloidal solutions of polystyrene latex nanoparticles", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (2006).
- K.Radmanović: «Chamber for dielectric constant measurements of samples in aqueous solutions», mentor: Silvia Tomić, Faculty of Science, University of Zagreb (2006).
- T.Ivek: «Charge density wave in quasi-one-dimensional cuprates», mentor: Silvia Tomić, Faculty of Science, University of Zagreb (2004).
- M.Lončarić: "Transport properties of charge density wave at low temperatures", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (2001).
- T.Vuletić: "Non-linear conductivity of spin density wave in Bechgaard salts", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (1998).
- M.Pinterić: "Dielectric response of commensurate charge density wave", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (1997).
- A.Omerzu: "Dielectric response of spin density wave", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (1994).
- M.Basletić: "Magnetoresistance of anisotropic organic conductor (TMTSF)<sub>2</sub>NO<sub>3</sub>", mentor: Silvia Tomić (with A.Hamzić), Faculty of Science, University of Zagreb (1992).
- S.Dolanski Babić: "Influence of disorder on electrical conductivity and ground state of organic conductors", mentor: Silvia Tomić, Faculty of Science, University of Zagreb (1991).

**INTERNSHIP THESES**

- Bruno Frka-Petešić: "Utilisation de la spectroscopie diélectrique basse fréquence dans l'étude de systèmes colloïdaux", mentor: Silvia Tomić, internship thesis in the framework of graduate study in physics at Université Denis Diderot ParisVII (2005).

**VISITS TO FOREIGN RESEARCH AND EDUCATION INSTITUTIONS**

(CHRONOLOGICALLY; ONLY VISITS LONGER THAN 3 MONTHS)

Since my postdoctoral one-year position (CNRS position) (1987-1988) in Laboratoire de Physique des Solides, University Paris-Sud, all my stays in foreign research institutions were always shorter than 3 months.

**AWARDS AND RECOGNITIONS**

(CHRONOLOGICALLY)

- 2008-today: Membership in Croatian Academy of Sciences and Arts: Associate member in The Department of Mathematical, Physical and Chemical Sciences

**ORGANIZATIONAL SKILLS AND COMPETENCES**

(CHRONOLOGICALLY; ORGANIZATION OF HOME AND INTERNATIONAL SCIENCE EVENTS)

- 2007-2010 president of the Croatian Physical Society
- Member of the Organisation Committee of Regional Biophysical Conference 2010 (Primošten, 2010)
- 2006-today: founder and co-organiser of international workshop „Chrystmas Biophysics Workshop“
- 1997-today: member of International Advisory Committee series of International Conference of Science and Tehnology of Synthetic Metals
- 1994 – member of the Organisation committee of the First Scientific Meeting of the Croatian Physical Society

**MEMBERSHIP IN SCIENCE ORGANIZATIONS AND BODIES**

(CHRONOLOGICALLY; HOME AND INTERNATIONAL ORGANIZATIONS AND BODIES)

- 2007-2010: president of the Croatian Physical Society
- 2007-2010: member of the European Physical Society Council
- 2007-today: Fellow of The Institute of Physics
- 2004-today: member of the American Physical Society
- 1994-today: member of the Croatian Physical Society

**COMMISSIONS, COMMITTEES, BOARDS AND WORK GROUPS**

(CHRONOLOGICALLY; HOME AND INTERNATIONAL)

- 2011: Chair-elect of the Scientific Advisory Committee of European Physical Journal
- 2009 – today: member of the Scientific Advisory Committee of European Physical Journal
- 2002: member of the Evaluation Committee for national scientific projects in physics - 1.02 physics
- 2001- 2003: president of the Scientific council of the Institute of Physics, Zagreb
- 2000-2003: member of the National Science Awards Committee
- 1994: member of the Managing Board of the Institute of Physics, Zagreb
- 1992-1996: president of the State Committee for experimental projects in physics for high school students

**LIST OF PUBLICATIONS**

15July 2011: 108 papers, total times cited: 1328 after researcherid.com search  
 in addition 11 papers and PhD thesis: times cited: 39 after direct search Web of knowledge  
 Total Times Cited: 1367  
 Total IF: 226.732

**A. SCIENTIFIC PAPERS PUBLISHED IN INTERNATIONAL JOURNALS IN CURRENT CONTENTS**

- "Electrodynamic Response of the Charge Ordering Phase: Dielectric and Optical Studies of  $\alpha$ -(BEDT-TTF)<sub>2</sub>I<sub>3</sub>", T.Ivek, B.Korin-Hamzic, O.Milat, **S.Tomic**, C.Clauss, N.Drichko, D.Schweitzer and M.Dressel, Phys.Rev.**B83**, 165128 (2011).  
Times Cited: ; IF= 3.475
- "Manning free counterion fraction for a rod-like polyion-short DNA fragment aqueous solutions in presence of very low added salt", T.Vuletić, S. Dolanski Babić, D. Grgičin, D.Aumiler, J.Raedler, F.Livolant and **S.Tomić**, Phys.Rev.**E83**, 041803 (2011).  
Times Cited: ; IF= 2.4
- "Structure and dynamics of hyaluronic acid semidilute solutions: A dielectric spectroscopy study", T.Vuletić, S.Dolanski Babić, T.Ivek, D.Grgičin, **S.Tomić** and R.Podgornik, Phys.Rev.**E82**, 011922 (2010).  
Times Cited: 1 ; IF= 2.4
- "Collective excitations in the charge-ordered phase of  $\alpha$ -(BEDT-TTF)<sub>2</sub>I<sub>3</sub>", T.Ivek, B.Korin-Hamzic, O.Milat, **S.Tomic**, C.Clauss, N.Drichko, D.Schweitzer and M.Dressel, Phys.Rev.Lett. **104**, 206406 (2010).  
Times Cited: 2; IF= 7.328
- "Crossover from one-dimensional copper-oxygen chains to two-dimensional ladders charge transport in (La,Y)<sub>y</sub>(Sr,Ca)<sub>14-y</sub>Cu<sub>24</sub>O<sub>41</sub>", T. Ivek, T. Vuletić, B. Korin-Hamzic, O. Milat, **S. Tomić**, B. Gorshunov, M. Dressel, J. Akimitsu, Y. Sugiyama, C. Hess and B. Büchner, Phys. Rev. **B78**, 205105 (2008).  
Times Cited: 2; IF= 3.322
- "Collective charge excitations below the metal-to-insulator transition in BaVS<sub>3</sub>", T. Ivek, T.Vuletić, **S.Tomić**, A.Akrap, H.Berger and L.Forro, Phys.Rev.B **78**, 035110 (2008).  
Times Cited: 4; IF= 3.322
- "Short-fragment Na-DNA dilute aqueous solutions: fundamental length scales and screening", **S.Tomić**, S.Dolanski Babić, T.Ivek, T. Vuletić, S. Krča, F.Livolant and R. Podgornik, Europhys.Letters **81**, 68003 (2008).  
Times Cited: 4; IF= 2.203
- "Terahertz BWO spectroscopy of conductors and superconductors", B.P.Gorshunov, A.A.Volkov, A.S.Prokhorov, I.E.Spektor, J.Akimitsu, M.Dressel, G.J.Nieuwenhuys, **S.Tomić** and S.Uchida, Quantum Electronics **37**, 916-923 (2007).  
Times Cited: 4; IF = 0.985
- "Unconventional spin-density wave in Bechgaard salt (TMTSF)<sub>2</sub>NO<sub>3</sub>", K.Maki, M.Basletić, B.Korin-Hamzic and **S. Tomić**, Phys.Rev.**B75**, 052409, 1-4 (2007).  
Times Cited: 3; IF= 3.172
- "Dielectric relaxation of DNA aqueous solutions", **S. Tomic**, S. Dolanski Babic, T.Vuletic, S. Krca, D. Ivankovic, L. Griparic and R. Podgornik, Phys.Rev.**E75**, 021905, 1-12 (2007).  
Times Cited: 7; IF= 2.483
- "Screening and Fundamental Length Scales in Semidilute Na-DNA Aqueous Solutions", **S. Tomic**, T. Vuletic, S. Dolanski Babic, S. Krca, D. Ivankovic, L. Griparic and R.Podgornik, Phys.Rev.Lett.**97**, 098303 (2006).

Times Cited: 8; IF= 7.072

- "The spin-ladder and spin-chain system  $(\text{La,Y,Sr,Ca})_{12}\text{Cu}_{24}\text{O}_{41}$ : electronic phases, charge and spin dynamics", T.Vuletić, B.Korin-Hamzić, T. Ivek, **S.Tomić**, B.Gorshunov, M.Dressel, and J.Akimitsu, *Physics Reports* **428**, 169-258 (2006).

Times Cited: 31; IF= 10.438

- "Anisotropy and field-dependence of the spin-density wave dynamics in the quasi one-dimensional conductor  $\text{TMTSF}_2\text{PF}_6$ ", P. Zornoza, K. Petukhov, M. Dressel, T.Vuletić, N.Biškup and **S.Tomić**, *Eur. Phys. J. B* **46**, 223-230 (2005).

Times Cited: 2; IF = 1.72

- "Anisotropic Charge Modulation in the Ladder Planes of  $\text{Sr}_{14-x}\text{Ca}_x\text{Cu}_{24}\text{O}_{41}$ ", T.Vuletić, T. Ivek, B.Korin-Hamzić, **S.Tomić**, B.Gorshunov, P.Haas, M.Dressel, J.Akimitsu, T. Sasaki and T.Nagata, *Phys.Rev.B* **71**, 012508 (2005).

Times Cited: 13; IF= 3.185

- "Mott-Peierls phase in deuterated copper-DCNQI systems: a comprehensive study of longitudinal and transverse conductivity and aging effects", M.Pinterić, T.Vuletić, M.Lončarić, K.Petukhov, B.Gorshunov, J.vonSchütz, **S.Tomić**, M.Dressel, *J.of Physics, Condensed Matter*, **15**, 7351-7364 (2003).

Times Cited: 0; IF =1.757

- "Variable-range hopping conductivity in the copper-oxygen chains of  $\text{La}_3\text{Sr}_3\text{Ca}_8\text{Cu}_{24}\text{O}_{41}$ ", T.Vuletić, B.Korin-Hamzić, **S.Tomić**, B.Gorshunov, P.Haas, M.Dressel, J.Akimitsu, T.Sasaki and T.Nagata, *Phys.Rev.***B67**, 184521 (1-4) (2003).

Times Cited: 21; IF= 3.07

- "Suppression of the charge-density wave state in  $\text{Sr}_{14}\text{Cu}_{24}\text{O}_{41}$  by calcium doping", T.Vuletić, B.Korin-Hamzić, **S.Tomić**, B.Gorshunov, P.Haas, T.Rôôm, M.Dressel, J.Akimitsu and T.Nagata, *Phys.Rev.Lett.***90**, 257002 (1-4) (2003).

Times Cited: 42; IF = 7.035

- "Influence of internal disorder on the superconducting state in the organic layered superconductor  $\kappa\text{-(BEDT-TTF)}_2\text{Cu}[\text{N}(\text{CN})_2]\text{Br}$ ", M.Pinterić, **S.Tomić**, M.Prester, Đ.Drobac and K.Maki, *Phys.Rev.***B66**, 174521 (1-12) (2002).

Times Cited: 25; IF= 3.07

- "Charge-density wave formation in  $\text{Sr}_{14}\text{Cu}_{24}\text{O}_{41}$ ", B.Gorshunov, P.Haas, T.Rôôm, M.Dressel, T.Vuletić, B.Korin-Hamzić, **S.Tomić**, J.Akimitsu and T.Nagata, *Phys.Rev.***B 66**, 060508(R) (1-4) (2002).

Times Cited: 32; IF= 3.07

- "Coexistence of superconductivity and spin density wave orderings in the organic superconductor  $(\text{TMTSF})_2\text{PF}_6$ ", T.Vuletić, P.Auban-Senzier, C.Pasquier, **S.Tomić**, D. Jérôme, M.Heritier and K.Bechgaard, *Eur. Phys. J B* **25**, 319-331 (2002).

Times Cited: 60; IF =1.741

- "Complex low frequency dielectric relaxation of the CDW state in the  $2,5(\text{OCH}_3)_2\text{DCNQI})_2\text{Li}$ ", M.Pinterić, T.Vuletić, **S.Tomić** and J.U.von Schütz, *Eur. Phys. J B* **22**, 335-341 (2001).

Times Cited: 8; IF = 1.811

- "Influence of quantum Hall effect on linear and nonlinear conductivity in the FISDW states of the organic conductor  $(\text{TMTSF})_2\text{PF}_6$ ", T.Vuletić, C.Pasquier, P.Auban-Senzier, **S.Tomić**, D. Jérôme, K.Maki and K.Bechgaard, *Eur. Phys. J B* **21**, 53-60 (2001).

Times Cited: 7; IF = 1.811

- "Low-frequency dielectric spectroscopy of the Peierls-Mott insulating state in the deuterated copper-DCNQI systems", M.Pinterić, T.Vuletić, M.Lončarić, **S.Tomić** and J.U.von Schütz, *Eur. Phys. J B* **16**, 487-493 (2000).

Times Cited: 3; IF = 2.077

- "Probing the Order Parameter of the Layered Organic Superconductor  $\kappa\text{-(BEDT-TTF)}_2\text{Cu}[\text{N}(\text{CN})_2]\text{Br}$  by AC Susceptibility Measurements", M.Pinterić, **S.Tomić**, M.Prester, Đ.Drobac, O.Milat, K.Maki, D.Schweitzer, I.Heinen, W.Strunz, *Phys.Rev.***B61**, 7033-7038 (2000).

Times Cited: 45; IF = 3.065

- "Magnetic Anisotropy and Low-Frequency Dielectric Response of Weak Ferromagnetic Phase in  $\kappa\text{-(BEDT-TTF)}_2\text{Cu}[\text{N}(\text{CN})_2]\text{Cl}$ , where BEDT-TTF is Bis (ethylenedithio) tetrathiafulvalene", M.Pinterić, M.Miljak, N.Biškup, O.Milat, I.Aviani, **S.Tomić**, D.Schweitzer, W.Strunz, I.Heinen, *Eur.Phys.J.* **B11**, 217-225 (1999).

Times Cited: 15; IF = 1.705



- "Charge Localization in Organic Conductors (TM)<sub>2</sub>X: the Influence of Anion Ordering", P.Auban-Senzier, C.Lenoir, P.Batail, D. Jérôme and **S.Tomić** Eur. Phys.Journal **B7**, 529-532 (1999).  
Times Cited: 2; IF = 1.705
- "Low-Frequency Dielectric Response of Charge-Density Wave Pinned by Commensurability in (2,5(OCH<sub>3</sub>)<sub>2</sub>DCNQI)<sub>2</sub>Li", **S.Tomić**, N.Biškup, M.Pinterić, J.U.von Schütz, H.Schmitt and R.Moret, Europhys.Lett.**38**, 219-224 (1997).  
Times Cited: 10; IF = 2.35
- "Negative Magnetoresistance in (TMTTF)<sub>2</sub>Br", M.Basletić, D.Zanchi, B.Korin-Hamzić, A.Hamzić, **S.Tomić** and J.M.Fabre, J.de Physique I France **6**, 1855-1864 (1996).  
Times Cited: 2; IF = 1.753
- "Electrical Conductivity in Orientationally Disordered Systems: AC and DC measurements in Ferromagnetic Single Crystals of TDAE-C60", A.Omerzu, D.Mihailovič, **S.Tomić** and N.Biškup, Phys.Rev.Lett.**77**, 2045 (1996).  
Times Cited: 13; IF = 6.14
- "Hall Effect in the Organic Conductor (TMTSF)<sub>2</sub>NO<sub>3</sub>", M.Basletić, B.Korin-Hamzić, A.Hamzić, **S.Tomić** and J.M.Fabre, Solid State Commun.**97**, 333 (1996).  
Times Cited: 3; IF = 1.323
- "Spin-Density Wave State of Tetramethyltetraselenofulvalinium Hexafluorophosphate (TMTSF)<sub>2</sub>PF<sub>6</sub>: Pressure and magnetic Field Effects", N.Biškup, **S.Tomić** and D.Jérôme, Phys.Rev.**B51**, 17972 (1995).  
Times Cited: 24; IF= 2.88
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- "Magnetotransport and EPR Measurements on  $(TSeT)_2Br$ ", C.Weyl, L.Brossard, **S.Tomić**, D.Mailly, D.Jérôme, B.Hilti and C.W.Mayer, *Mol.Cryst.Liq.Cryst.***120**, 263 (1985).

Times Cited: 4; IF = 1.22

- "Influence of the Anion Order on the Ground State of the Organic Conductor  $(TMTSF)_2 ReO_4$ ", **S.Tomić**, D.Jérôme and K.Bechgaard, *Mol.Cryst.Liq.Cryst.***119**, 241 (1985).

Times Cited: 5; IF = 1.22

- "Cooling Rate and Electric Field Effects in  $(TMTSF)_2 FSO_3$ ", **S.Tomić**, D.Jérôme and K.Bechgaard, *Mol.Cryst.Liq.Cryst.***119**, 59 (1985).

Times Cited: 2; IF = 1.22

- "Influence of the Disorder Potential of the Anions on the ground State of the Organic Alloy  $(TMTSF)_2(ClO_4)_{1-x}(ReO_4)_x$ ", **S.Tomić**, D.Jerome, D.Mailly, M.Ribault and K.Bechgaard, *J.Physique Colloq.***44**, C3-1075 (1983).

Times Cited: 41; IF = 0.294

- "Influence of the Anion Disorder on the Low Temperature Behaviour of the Organic Superconductor  $(TMTSF)_2ClO_4$ ", **S.Tomić**, D.Jérôme, P.Monod and K.Bechgaard, *J.Physique Colloq.***44**, C3-1083 (1983).

Times Cited: 16; IF = 0.294

- "Influence of Disorder on the Metal-Insulator Phase Transition in  $(TMTSF)_2BrO_4$ ", **S.Tomić**, J.P.Pouget, D.Jerome, K.Bechgaard, J.M.Williams, *Journal de Physique* **44**, 1081 (1983).

Times Cited: 0, IF = 1.81

- "Non-linear Dielectric Properties of NbSe<sub>3</sub> below the Peierls Transition at 145-K", D. Djurek, M. Prester, **S. Tomić**, *Mol.Cryst.Liq.Cryst.***86**, 2051 (1982).

Times Cited: 0; IF = 1.22

- "Specific Heat Measurements of the Quasi One-Dimensional Conductor HMTTF-TCNQ", K.Biljaković-Franulović, **S.Tomić**, M.Prester and D.Djurek, *Fizika* **10**, Suppl.2., 254 (1978).

Times Cited: 0

#### **D. SCIENTIFIC PAPERS PRESENTED AT INTERNATIONAL CONFERENCES AND PUBLISHED IN PROCEEDINGS NOT IN CURRENT CONTENTS**

- "Diffraction analysis of incommensurate modulation in „chain-ladder“ composite crystal  $(Sr/Ca/La)_{14}Cu_{24}O_{41}$ ", O.Milat, K.Salamon, **S.Tomić**, T.Vuletić and T.Ivek, 14th European Microscopy Congress, Aache, Germany, M. Luysberg, K. Tillmann, T. Weirich (ur.). Heidelberg : Springer-Verlag Berlin, 209-210 (2008).

Times Cited:

- "Properties of Mott-Peierls insulating phase in deuterated copper-DCNQI systems", M.Pinterić, T.Vuletić and **S.Tomić**, Proceedings of 39<sup>th</sup> International Conference on Microelectronics, Devices and Materials MIDEM'03, Ptuj, Slovenia, 231-236 (2003).

Times Cited:

- "The Low-Frequency Dielectric Response and Non-Linear Electrical Transport in  $\kappa$ - $(BEDT-TTF)_2Cu[N(CN)_2]Cl$ ", M.Pinterić, N.Biškup, **S.Tomić**, D.Schweitzer, W.Strunz and I.Heinen, Proceedings of 35<sup>th</sup> International Conference on Microelectronics, Devices and Materials MIDEM'99, Ljubljana, Slovenia, October 13-15 (1999), p.83-p.88.

Times Cited: 0

- "Transport Properties of Charge-Density Wave in the  $(2,5(OCH_3)_2DCNQI)_2Li$ ", M.Pinterić, **S.Tomić** and J.U.von Schütz, Proceedings of 34<sup>th</sup> International

Conference on Microelectronics, Devices and Materials MIDE M'98, Rogaška Slatina, Slovenia, September 23-25 (1998), p.99-p.104.

Times Cited: 0

#### THESE D'ETAT

- "Propriétés électroniques des composés  $(TMTSF)_2X$  et de leurs alliages: rôle des anions sur l'état fondamental et le comportement de basse température", S.Tomic, Université Paris Sud 1986.

Times Cited: 27

#### OTHER RESEARCH ACTIVITIES

(CHRONOLOGICALLY; CHIEF EDITOR OR EDITOR OF RESEARCH BOOK, HOME AND INTERNATIONAL RESEARCH JOURNALS, HOME AND INTERNATIONAL CONFERENCE PROCEEDINGS AND OTHER)

- 2009-2010: member of the Scientific Advisory Committee of The European Physical Journal
- 2011 Chair-elect of the Scientific Advisory Committee of The European Physical Journal
- 2012 Chair of the Scientific Advisory Committee of The European Physical Journal

#### COMPUTER SKILLS

Yes, Microsoft programmes

#### OTHER IMPORTANT SKILLS AND COMPETENCES

- 2011: referee for the PhD thesis of S.Bernu at Université Paris-Sud, Orsay
- 2007-today: Member of the Council of the Postgraduate Study in Biophysics at the University of Split
- 2010 : member of the Habilitation committee of V.Ilakovac (habilitation de diriger des recherches) at Université Pierre et Marie Curie, Paris
- 2007: member of the Habilitation committee and referee for the habilitation of P.Foury (habilitation de diriger des recherches) at Université Paris-Sud, Orsay
- 2006: member of the PhD committee and referee for the PhD thesis of N.Joo at Université Paris-Sud, Orsay
- 2005 : member of the PhD committee and referee for the PhD thesis of C.Colin at Université Pierre et Marie Curie, Paris
- 2000 : member of the PhD committee and referee for the PhD thesis of D.Starešinić at Université J.Fourier, Grenoble and at University of Zagreb
- 2009 – today: referee for the European Physical Journal E
- 2008 – today: referee for Carbon
- 2007 – today: referee for Modern Physics Letters
- 1998 – today: referee for the European Physical Journal B
- 1991 – today: referee for Europhysics Letters and Journal de Physique



## LECTURES/SEMINARS

- 2009: "Structure and dynamics of Na-DNA aqueous solutions", Department of Physics, Faculty of Sciences, University of Zagreb, Croatia
- 2009: "Complex and non-linear dynamics of charge and spin structures", Institut za fiziku, Znanstveni skup povodom izbora Dr. Johna Coopera, dugogodišnjeg suradnika, za redovnog profesora Sveučilišta u Cambridgeu (Institute of Physics, Scientific meeting on the occasion of promotion of Prof. Dr. John Cooper at the Cambridge University)
- 2008: "Fundamental Length Scales and Screening in Biopolyelectrolytes", Physics Department, University of Ljubljana
- 2006: "Dielectric relaxation of DNA aqueous solutions", 1.Physikalisches Institut, Universität Stuttgart
- 2005: "Dielectric relaxation of DNA aqueous solutions", Laboratoire de Physique des Solides, Université Paris-Sud, Orsay, France
- 2005: "Electronic phases and charge dynamics in the spin ladder and chain system  $\text{Sr}_{14-x}\text{Ca}_x\text{Cu}_{24}\text{O}_{41}$ ", Laboratoire de Physique des Solides, Université Paris-Sud, Orsay, France
- 2005: "Electronic phases and charge dynamics in the spin ladder and chain system  $\text{Sr}_{14-x}\text{Ca}_x\text{Cu}_{24}\text{O}_{41}$ ", Laboratoire de Chimie Physique – Matière et Rayonnement, Université Pierre et Marie Curie, Paris, France
- 2004: "Charge-Density Wave State in Ladder Planes of  $\text{Sr}_{14-x}\text{Ca}_x\text{Cu}_{24}\text{O}_{41}$ ", Université de Sherbrooke, Canada
- 2002: "Phason Low-Frequency Response in Charge/Spin Density Waves", 1.Physikalisches Institut, Universität Stuttgart,
- 2002: "Low-frequency Dielectric Spectroscopy in Low-Dimensional Systems", Department of Physics and Astronomy, University of Southern California, Los Angeles, USA
- 2002: "Low-frequency Dielectric Spectroscopy in Low-Dimensional Systems", Dept. of Physics, NHMFL, Florida State University, Tallahassee; University of Florida, Gainesville, USA
- 2002: "Low-frequency Dielectric Spectroscopy in Low-Dimensional Systems", National Institute of Health, LPSB, Bethesda, USA
- 2001: "Superconductivity and magnetism in organic layered superconductors", Department of Physics and Astronomy, University of Southern California, Los Angeles, USA
- 2001: "Superconductivity and magnetism in organic layered superconductors", Department of Physics, Boston College, Chestnut Hill and Department of Physics, Boston University, Boston, USA
- 2001: "Superconductivity and magnetism in organic anisotropic materials", Institute of physics, Zagreb, Croatia
- 2000: "Low-frequency Dielectric Spectroscopy in Low-Dimensional Systems", Institute of Physics, University of Basel, Basel, Switzerland
- 2000: "Low-frequency Dielectric Spectroscopy in Low-Dimensional Systems", Département de Physique, Ecole Polytechnique Federale de lausanne, Lausanne, Switzerland
- 1995: "Complex Low Frequency Dielectric Response of Spin-Density Wave in  $(\text{TMTSF})_2\text{PF}_6$ ", Service National des Champs Magnétiques Pulsés, Toulouse, France
- 1995: "Charge and Spin Density Waves in Radical Ion Salts", 3.Physikalisches Institut, Universität Stuttgart, Stuttgart, Germany
- 1994: "Dynamics of Spin-Density Waves", Gakushuin University, Tokyo, Japan
- 1992: "Magnetic Field Influence on the Low and High Electric Field Transport in the Spin-Density Wave State of the Organic Conductor  $(\text{TMTSF})_2\text{NO}_3$ : Imperfect Nesting Effects", Laboratoire de Physique des Solides, Université de Paris-Sud, Orsay, France
- 1992: "Magnetic Field Influence on the Low and High Electric Field Transport in the Spin-Density Wave State of the Organic Conductor  $(\text{TMTSF})_2\text{NO}_3$ : Imperfect Nesting Effects", CRTBT, Grenoble, France
- 1992: "Transport Properties of Organic Conductors and Superconductors" Ecole Polytechnique Federale de Lausanne, Switzerland

- 1992: "Normal Phase Electrical Transport and Superconductivity in Low-Dimensional Organic Conductors: Some New Results and Open Problems" Laboratoire de Physique des Solides, Université de Paris-Sud, Orsay, France
- 1991: "Organic Conductors: Physics of Reduced Dimensionality", Odense University, Denmark
- 1989: "Non-Ohmic Electrical Transport in the Spin-Density Wave State of the Organic Conductors (TMTSF) X", University of Hokkaido, Sapporo, Japan
- 1989: "Non-Ohmic Electrical Transport in the Spin-Density Wave State of the Organic Conductors (TMTSF) X", University of Kyoto, Kyoto, Japan
- 1989: "Non-Ohmic Electrical Transport in the Spin-Density Wave State of the Organic Conductors (TMTSF) X", Electrotechnical Laboratory, Tsukuba, Japan
- 1988: "Pressure-Temperature Phase Diagram of the Organic Conductors (DM-DCNQI)<sub>2</sub>X, X=Cu, Ag", University of Bayreuth, Germany
- 1988: "Non-Linear Conductivity in Charge and Spin Density Waves", University of Stuttgart, Germany
- 1986: "Effects of Non-Magnetic Disorder in Organic Superconductors", IBM Research Laboratory, San Jose, CA, USA
- 1986: "Effects of Non-Magnetic Disorder in Organic Superconductors", UCLA, Solid State Physics Department, CA, USA
- 1986: "Effects of Non-Magnetic Disorder in Organic Superconductors", Princeton University, USA

### INVITED TALKS AT INTERNATIONAL CONFERENCES AND SUMMER SCHOOLS

- "Dynamics and structure of biopolyelectrolytes characterized by dielectric spectroscopy", 18th European Symposium on Polymer Spectroscopy, 19-22 September 2010, Zadar (Croatia).
- "Structure and Dynamics of Na-DNA Aqueous Solutions", The first meeting of EMBO conference series of Cell Biophysics, PhysCell2009, 6-13 September 2009, Primošten (Croatia).
- "Complex and nonlinear dynamics of charge and spin structures", XXIV International Conference of Physics Students, 10-18 August 2009, Split (Croatia).
- "Fundamental Length Scales and Screening in Dilute and Semidilute Na-DNA Aqueous Solutions", Regional Biophysics Conference 2009, Linz, Austria (2009).
- "Dielektrična relaksacija genomske deoksiribonukleinske kiseline" ("Dielectric relaxation of genomic DNA"), 4. znanstveni sastanak hrvatskih biofizičara (4<sup>th</sup> Scientific Meeting of Croatian Biophysicists), R.Bošković Institute, Zagreb (9 September 2005)
- "Charge-Density Wave State in Ladder Planes of Sr<sub>14-x</sub>Ca<sub>x</sub>Cu<sub>24</sub>O<sub>41</sub>", International Conference on Low Energy Electrodynamics in Solids (LEES'04), Kloster Banz, Germany (2004).
- «Dielectric spectroscopy of genomic DNA solutions», International Conference "From Solid State to Biophysics", Cavtat, Croatia (2004).
- «Suppression of the Charge-Density Wave State in Sr<sub>14</sub>Cu<sub>24</sub>O<sub>41</sub> by Calcium Doping», March Meeting of American Physical Society, Montreal, Canada (2004).
- «Modalities of self-organized charge-response in low dimensional systems» International Conference "From Solid State to Biophysics", Cavtat, Croatia (2002).
- "Genuine superconducting ground state in kappa-(BEDT-TTF)<sub>2</sub>Cu[N(CN)<sub>2</sub>]Br: an understanding after decade of controversy", International Conference on Science and Technology of Synthetic Metals (ICSM 2002), Shanghai, China (2002).
- "Low-frequency dielectric spectroscopy of commensurate density waves", International Conference on Science and Technology of Synthetic Metals, ICSM'00, Bad-Gastein, Austria (2000).
- "Low-Frequency Dielectric Response of Charge-Density Wave Pinned by Commensurability in the Organic Conductor (2,5(OCH<sub>3</sub>)<sub>2</sub>DCNQI)<sub>2</sub>Li", International Symposium on Crystalline Organic Metals, Superconductors and Ferromagnets, Sesimbra, Portugal (1997).
- "Complex Low Frequency Dielectric Response of the Incommensurate Spin-Density Wave Phase in the Bechgaard Salt (TMTSF)<sub>2</sub>PF<sub>6</sub>", International Symposium on

Crystalline Organic Metals, Superconductors and Ferromagnets, Mittelberg, Austria (1995).

- "Collective Charge Response in Incommensurate and Commensurate Spin-Density Waves", International Symposium on Novel Electronic States in Molecular Conductors, ISMC'94, Tokyo, Japan (1994).
- "Magnetic Field Influence on the Spin-Density Wave Phase of the Organic Conductor  $(\text{TMTSF})_2\text{NO}_3$ ", International Workshop on Electronic Crystals ECRYS-93, Carry-Le-Rouet, France (1993).
- "Physical Properties of Novel Organic Alloys  $[(\text{TMTSF})_{1-x}(\text{TMTTF})_x]_2\text{ReO}_4$ " Gordon Research Conference on Organic Superconductors, Il Ciocco, Italy (1993).
- "Magnetic Field Influence on the Low and High Electric Field Transport in the Spin-Density Wave State of the Organic Conductor  $(\text{TMTSF})_2\text{NO}_3$ ", International Conference on Science and Technology of Synthetic Metals, ICSM'92, Göteborg, Sweden (1992).
- "Influence of Disorder on Non-Linear Conductivity in SDW states of Bechgaard salts", Gordon Research Conference on Organic Superconductors, Irsee, Germany (1991).
- "Non-Ohmic Electrical Transport in the Spin-Density Wave State of the Organic Conductors  $(\text{TMTSF})_2\text{X}$ ", International Conference on Science and Technology of Synthetic Metals, ICSM'90, Tübingen, Germany (1990).
- "Non-Ohmic Electrical Transport in the Spin-Density Wave State of Organic Conductors", Third European Conference on Low-Dimensional Conductors and Superconductors, Dubrovnik, Croatia (1989).
- "A Hidden Low-Temperature Phase in the Organic Conductor  $(\text{TMTSF})_2\text{ReO}_4$ " The First ISSP International Symposium on the Physics and Chemistry of Organic Superconductors, Tokyo, Japan (1989).
- "Non-Linear Electrical Transport Effects in the Spin-Density Wave State of the Organic Conductors  $(\text{TMTSF})_2\text{X}$ ", NATO Advanced Study Institute "Lower-Dimensional Systems and Molecular Electronics", Spetses, Greece (1989).
- "Pressure-Temperature Phase Diagram of the Organic Conductor  $(\text{DM-DCNQI})_2\text{Cu}$ ", International Conference on Science and Technology of Synthetic Metals, ICSM'88, Santa Fe, NM, USA (1988).
- "Spin-Density Wave in the Organic Conductor  $(\text{TMTSF})_2\text{NO}_3$ : Antiferromagnetic Critical Effects and Non-Linear Electrical Transport", International Conference on Science and Technology of Synthetic Metals, ICSM'88, Santa Fe, NM, USA (1988).
- "Antiferromagnetic Critical Effects and Non-Linear Conductivity in the Organic Conductor  $(\text{TMTSF})_2\text{NO}_3$ ", UCLA Spin-Density Wave Workshop, Los Angeles, USA (1988).
- "Effects of Non-Magnetic Disorder in Organic Superconductors", NATO Advanced Study Institute on Low-Dimensional Organic Conductors and Superconductors, Magog, Canada (1986).

## POPULAR LECTURES

- "Biological phenomena and physical concepts", Professional workshop for physics teachers, Institute of Physics, Zagreb (September 2009).
- "Biological phenomena and physical concepts", Summer school for young physicists, Mali Lošinj, (June 2009).
- "Density waves as self-organized structure: complementarity of collective and single-particle electrical conductivity channel"; Professional workshop for physics teachers, Institute of Physics, Zagreb (1999).

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## BRIEF DESCRIPTION OF MAJOR ACHIEVEMENTS AND CONTRIBUTIONS IN SCIENCE

Silvia Tomic is a Senior Research Advisor at the Institute of Physics in Zagreb. She studied physics at Faculty of Science, University of Zagreb and received her degree of *Docteur d'etat es Sciences Physiques* at University Paris-Sud. Her research fields are condensed matter physics and biological physics. Her main research topics are collective electronic

phases in strongly correlated materials with reduced dimensionality, as well as dynamics and structure of biopolyelectrolytes. Her major achievements and contributions in science are:

- 1) Sliding conductivity in spin density waves (SDW): the electric-field dependent response in SDW phase due to the sliding phason mode (4kF charge modulation) similar to that of the charge-density waves (CDW, 2kF charge modulation); in-depth characterization of transport properties (ST et al., PRL89, times cited: 113; JPhys1991, times cited: 69; PRB1990, times cited: 55; PRB91, times cited 26);
- 2) The decisive role of nonmagnetic disorder which reveals the nature of the unconventional superconductivity in organic systems. In quasi-1D systems, slow cooling rates allow for a structurally ordered low-temperature phase and formation of superconductivity (SC), in contrast fast cooling induces disorder, suppresses SC and promotes the competing SDW phase (ST et al, JPhysLett43, L-839,1982, times cited: 73, JPhys44, C3-1083,1983, times cited: 16; JPhys44, C3-1075,1983: 41); In 2D systems the SC order parameter is critically determined by the level of residual disorder: nominally pure slowly-cooled samples show behavior consistent with the d-wave SC, while increased residual disorder yields behavior expected for a d-wave SC with impurities or an s-wave SC (MP et al, PRB2000, times cited: 45, PRB2002, times cited: 25);
- 3) Bistable resistance, i.e. switching between two different conductance states (from metal to insulator and back) in an organic conductor with hybridized LUMO organic orbitals and d-orbitals of copper: in-depth characterization of the phase diagram revealed rather destructive phase transitions associated with a change in the environment of the Cu cations which can be turned on and off by external (or internal) means like temperature and pressure (ST et al., JPhysC1988, times cited: 91, EPL1988, times cited: 31, SM1988, times cited: 38);
- 4) Anisotropic charge ordering within the ladder planes of the composite chain-ladder cuprate system SrCaCuO whose length scale is quickly reduced by Ca substitution, at high doping levels the CDW order fully vanishes due to increased dimensionality and disorder; construction of the phase diagram and in-depth analysis of competing electronic phases (TV et al., PRL2003, times cited: 42, BG et al., PRB2002, times cited: 32, TV et al., PhysRep2006, times cited: 31, PRB2003, times cited: 21; PRB2005, times cited: 13).
- 5) Dynamics of biopolyelectrolytes in low ac electric fields by Dielectric spectroscopy which can detect and discern structural organization of the solution as an ensemble composed of many chains, as well as structural properties of a single chain (ST et al., PRL2006, times cited: 8, PRE2007, times cited: 7, EPL2008, times cited:4).