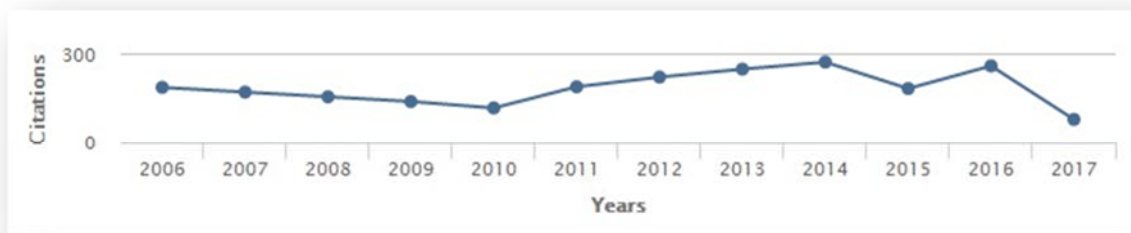


## **Publication List – Prof. Dr. Peter Lemmens – 08/2017**

- More than 260 refereed publications, incl. 10 review articles and books.
- Hirsch Index:  $h \geq 29$ , more than 3000 total citations (Scopus, 07/2016).



## **Preprints**

- 1) *Approach to determine measurement uncertainty in complex nanosystems with multiparametric dependencies and multivariate output quantities*, B. Hampel, B. Liu, F. Nording, J. Ostermann, P. Struszewski, J. Langfahl-Klabes, M. Bieler, H. Bosse, P. Lemmens, M. Schilling, R. Tutsch, preprint (2017).
- 3) *Phase separation in iron chalcogenide superconductor  $Rb_{0.8+x}Fe_{1.6+y}Se_2$  as seen by Raman light scattering and band structure calculations*, Yu. Pashkevich, V. Gnezdilov, P. Lemmens, T. Shevtsova, A. Gusev, K. Lamonova, D. Wulferding, S. Gnatchenko, E. Pomjakushina, K. Conder, arXiv:1604.06825 (2016).
- 4) *Doping effects on charge density instability in noncentrosymmetric  $Pb_xTaSe_2$* , A. Sharafeev, P. Lemmens, A. Glamazda, K.-Y. Choi, R. Sankar, F. C. Chou, arXiv:1505.00748 (2015).
- 5) *Tailoring the Surface Plasmon Resonance Energy of Au nanowires array by defect management and thermal treatment*, H.-D. Yan, B. Liu, P. Lemmens, A. Glamazda, M. Bröring, and M. Schilling, preprint (2016).
- 6) *Magnetic excitations in the symmetry protected, topological, quasi-one-dimensional Haldane phase of  $SrNi_2V_2O_8$* , V. Gnezdilov, V. Kurnosov, P. Lemmens, Yu. Pashkevich, preprint (2016).

## **Patents:**

- 1) *Expression of Interest on Bio-Templated Nanosensor for Mercury Detection in PPB Level*, S. Chakrabarti, S. K. Pal, N. Polley, P. K. Sarkar, P. Lemmens, Application No. 201621004916, 11.2.2016 (2016).
- 2) *Method for detecting mercury in an aqueous sample*, S. Chakrabarti, S. K. Pal, P. K. Sarkar, N. Polley, P. Lemmens, 14.6.2016 (2016).

## Refereed Publications

### 2017

267) *Lattice and magnetic instabilities in  $Cu_3Bi(SeO_3)_2O_2X$  ( $X=Br, Cl$ )*, V. Gnezdilov, Yu. Pashkevich, P. Lemmens, V. Kurnosov, P. Berdonosov, V. Dolgikh, E. Kuznetsova, V. Pryadun, K. Zakharov, and A. Vasiliev, Phys. Rev. B, in print (2017).

266) *DNA-based Fiber Optic Sensor for Direct In-vivo Measurement of Oxidative Stress*, P. K. Sarkar, A. Haldar, A. Adhikari, N. Polley, S. Darbar, P. Lemmens and S. K. Pal, Sensors & Actuators: B. Chemical, in print (2017).

265) *Three in one approach towards efficient organic dye sensitized solar cells: Anti aggregation, panchromatic absorption and resonance energy transfer*, J. Patwari, P. Lemmens, S. Samim, B. Liu, S. K. Pal, Beilstein J. of Nanotechn., in print (2017).

264) *From magnetic order to spin liquid ground states on the  $S = 3/2$  triangular lattice*, J. Tapp, C. R. de la Cruz, M. Bratsch, N. E. Amuneke, L. Postulka, B. Wolf, M. Lang, H. O. Jeschke, R. Valenti, P. Lemmens, and A. Möller, Phys. Rev. **B 96**, 064404 (2017).

263) *Relation between Kitaev magnetism and structure in  $\alpha$ - $RuCl_3$* , A. Glamazda, P. Lemmens, S.-H. Do, Y. S. Kwon, and K.-Y. Choi, Phys. Rev. **B 95**, 174429 (2017).

262) *Quantum criticality in the coupled two-leg spin ladder  $Ba_2CuTeO_6$* , A. Glamazda, Y.S. Choi, S.-H. Do, S. Lee, P. Lemmens, A. N. Ponomaryov, S. A. Zvyagin, J. Wosnitza, Dita Puspita Sari, I. Watanabe, and K.-Y. Choi, Phys. Rev. **B 95**, 184430 (2017).

261) *Optical phonon dynamics and electronic fluctuations in the Dirac semimetal  $Cd_3As_2$* , A. Sharafeev, V. Gnezdilov, R. Sankar, F. C. Chou, and P. Lemmens, Phys. Rev. **B 95**, 235148 (2017).

260) *Phonon excitations in the quasi-one-dimensional Haldane phase of  $SrNi_2V_2O_8$* , V. Kurnosov, V. Gnezdilov, P. Lemmens, Yu. Pashkevich, A. K. Bera, A. T. M. N. Islam, and B. Lake, Low Temperature Physics/Fizika Nizkikh Temperatur, in print (2017).

259) *Nanocylindrical confinement imparts highest structural order in molecular self-assembly of organophosphonates on aluminum oxide*, A. Pathak, A. Bora, B. Braunschweig, C. Meltzer, H. Schmolke, H.-D. Yan, P. Lemmens, W. Daum, J. Schwartz, C.-P. Klages, M. Tornow, Nanoscale **9**, 6291 (2017).

258) *A Novel Nanohybrid for Cancer Theranostics: Folate Sensitized  $Fe_2O_3$  Nanoparticle for Colorectal Cancer Diagnosis and Photodynamic Therapy*, R. Nandi, S. Mishra, T. K. Maji, S. Banerjee, P. Kara, K. Manna, S. Dutta, S. K Sharma, P. Lemmens, K. Das Saha, S. K. Pal, J. Mater. Chem. B **5**, 3927 (2017), DOI: 10.1039/C6TB03292C (2016).

257) *Modelling plexcitons of periodic gold nanorod arrays with molecular components*, B. Liu, H. D. Yan, R. Stosch, B. Wolfram, M. Bröring, A. Bakin, A. Waag, M. Schilling, and P. Lemmens, Nanotechnology **28**, 195201 (2017).

256) *Comparative Raman scattering study of  $Ba_3MSb_2O_9$  ( $M=Zn, Co$  and  $Cu$ )*, A. Glamazda, P. Lemmens, S.-H. Do, and K.-Y. Choi, Low Temperature Physics/Fizika Nizkikh Temperatur **43**, No. 5, pp. 683 (2017).

255) *Sensitized ZnO Nanorod assemblies to detect heavy metal contaminated phytomedicines: Spectroscopic and Simulation Studies*, D. Bagchi, T. K. Maji, S. Sardar, P.

Lemmens, C. Bhattacharya, D. Karmakar and S. K. Pal, Phys. Chem. Chem. Phys. 19, 2503 (2017).

254) *In-situ hydrothermal synthesis of Bi-Bi<sub>2</sub>O<sub>2</sub>CO<sub>3</sub> heterojunction photocatalyst with enhanced visible light photocatalytic activity*, P. Kar, T. Maji, R. Nandi, P. Lemmens and S. K. Pal, Nano Micro Lett. **9**, 18 (2017); doi: 10.1007/s40820-016-0118-0.

## 2016

253) *Resveratrol-ZnO Nanohybrid Enhanced Anti-cancerous Effect in Ovarian Cancer Cells through ROS*, M. Khatun, S. Choudhury, B. Liu, P. Lemmens, S. K. Pal, and S. Mazumder, RSC Adv. **6**, 105607 (2016).

252) *DNA Biomaterial Based Fiber Optic Sensor: Characterization and Application for Monitoring in situ Mercury Pollution*, N. Polley, P. Sarkar, S. Chakrabarti, P. Lemmens, and S. K. Pal, ChemistrySelect **1**, Issue 11, 2916, (2016).

251) *Raman spectroscopic signature of fractionalized excitations in the harmonic-honeycomb iridates  $\beta$ - and  $\gamma$ -Li<sub>2</sub>IrO<sub>3</sub>*, A. Glamazda, P. Lemmens, S.-H. Do, K.-Y. Choi, Nature Commun. **7**, 12286 (2016).

250) *Facile Synthesis of Reduced Graphene Oxide-gold Nanohybrid for Potential Use in Industrial Waste-water Treatment*, P. Kar, S. Sardar, Bo Liu, M. Sreemany, P. Lemmens, S. Ghosh, and S. K. Pal, Sci. and Techn. Adv. Mat. **17**, 375 (2016).

249) *Porous Silicon Synthesis and its use as Template to Confine Organic and Inorganic Materials and to produce Nanostructures*, P. Kumar and P. Lemmens, Proc. of IWCEM2016, in print (2016).

248) *Nano-Surface Energy Transfer Based Highly Selective and Ultrasensitive "Turn on" Fluorescence Mercury Sensor*, P. Sarkar, N. Polley, S. Chakrabarti, P. Lemmens, S. Pal, ACS Sensors **1**, 789 (2016).

247) *Dynamically Driven Allostery, Inside Cover Page*, S. Choudhury, G. Naiya, P. Singh, P. Lemmens, S. Roy and S. K. Pal, ChemBioChem **17**, 1 (2016).

246) *Phase separation in iron chalcogenide superconductor Rb<sub>0.8+x</sub>Fe<sub>1.6+y</sub>Se<sub>2</sub> as seen by Raman light scattering and band structure calculations*, Yu. Pashkevich, V. Gnezdilov, P. Lemmens, T. Shevtsova, A. Gusev, K. Lamonova, D. Wulferding, S. Gnatchenko, E. Pomjakushina, and K. Conder, Journ. Low Temp. Physics (FNT) **42**, 628 (2016).

245) *Effect of potentiostatic and galvanostatic electrodeposition modes on the basic parameters of solar cells based on Cu<sub>2</sub>O thin films*, M. Abdelfatah, J. Ledig, A. El-Shaer, A. Sharafeev, P. Lemmens, M. Mosaad, A. Waag, A. Bakin, Electrochem. Soc. Journ. of Solid State Science and Techn. **5**, Q183 (2016).

244) *Implementation of a metrological UHV-STM*, J. Ostermann, I. Busch, J. Flügge, L. Koenders, O. Lenck, R. Popadic, Proceedings Euspen's 16th Intl. Conf., Elsevier, in print (2016).

243) *Enhanced Photovoltage in DSSC: Synergistic Combination of Silver Modified TiO<sub>2</sub> Photoanode and low cost Counter Electrode*, S. Sardar, H. Remita, P. Kar, B. Liu, P. Lemmens, S. K. Pal, and S. Ghosh, RSC Advances **6**, 33433 (2016).

242) *Molecular Recognition of Genomic DNA in a Condensate with a Model Surfactant for Potential Gene-delivery Applications*, P. Singh, S. Choudhury, G. K. Chandra, P. Lemmens, and S. K. Pal, *J. of Photochem. and Photobiol. B* **157**, 105 (2016).

241) *Scattering: Inelastic Scattering Technique – Raman*, P. Lemmens and K. Y. Choi, Reference Module in Materials Science and Materials Engineering, edited by S. Hashmi, Oxford: Elsevier; pp. 1-10. (2016).

240) *Modulation of Ultrafast Conformational Dynamics in Allosteric Interaction of Gal Repressor Protein with Different Operator DNA Sequences*, S. Choudhury, G. Naiya, P. Singh, P. Lemmens, S. Roy and S. K. Pal, *ChemBioChem* **17**, 605 (2016).

239) *Microwave-assisted synthesis of Mn<sub>2</sub>O<sub>3</sub> porous balls as bifunctional electrocatalyst for oxygen reduction and evolution*, S. Ghosh, P. Kar, S. Basu, S. Sardar, D. Majumdar, S. K. Bhattachary, A. Bhaumik, P. Lemmens, S. K. Pal, *Catal. Sci. Technol.* **6**, 1417 (2016).

238) *Photoinduced Dynamics and Toxicity of a Cancer Drug in Proximity of Inorganic Nanoparticles under Visible Light*, S. Chaudhuri, S. Sardar, D. Bagchi, P. Saha, P. Lemmens, and S. K. Pal, *ChemPhysChem* **17**, 270 (2016).

## 2015

237) *Fabrication and characterization of flexible solar cell from electrodeposited Cu<sub>2</sub>O thin film on plastic substrate*, Mahmoud Abdelfatah, J. Ledig, A. El-Shaer, A. Wagner, A. Sharafeev, P. Lemmens, M. Mossad, A. Waag, A. Bakin, *Journ. Solar Energy* **122**, 1193 (2015).

236) *Photoluminescence quenching and confinement effects in Mesoporous Silicon: Photoluminescence, Optical and Electrical Studies*, P. Kumar and P. Lemmens, *RSC Adv.* **5**, 91134 (2015).

235) *Enhanced Charge Separation and Resonance Energy Transfer at Heterojunctions between Semiconductor Nanoparticles and Conducting Polymer Nanofibers for Efficient Solar Light Harvesting*, S. Sardar, P. Kar, H. Remita, B. Liu, P. Lemmens, S. K. Pal, and S. Ghosh, *Sci. Reports* **5**, 17313 (2015).

234) *Fabrication and characterization of low cost Cu<sub>2</sub>O/ZnO:Al solar cells for sustainable photovoltaics with earth abundant materials*, M. Abdelfatah, J. Ledig, A. El-Shaer, A. Wagner, V. M. Borrás, A. Sharafeev, P. Lemmens, M. M. Mosaad, A. Waag, A. Bakin, *J. Energy Mat. and S. Cells* **145**, 400 (2015).

233) *Modulation of Stability and Functionality of a phyto-antioxidant by weakly interacting metal ions: Curcumin in Aqueous Solution*, D. Bagchi, S. Chaudhuri, S. Sardar, S. Choudhury, N. Polley, P. Lemmens, and S. K. Pal, *RSC Adv.* **5**, 102516 (2015).

232) *Structural instability of the CoO<sub>4</sub> tetrahedral chain in SrCoO<sub>3-δ</sub> thin films*, A. Glamazda, K.-Y. Choi, P. Lemmens, W. S. Choi, H. Jeon, T. Meyer, and H. N. Lee, *Journ. Appl. Phys.* **118**, 085313 (2015).

231) *Direct Observation of Kinetic Pathways of Biomolecular Recognition*, S. Choudhury, S. Batabyal, P. K. Mondal, P. Lemmens, and S. K. Pal, *Chemistry, An Eur. Journ.* **21**, 16172 (2015).

230) *Nano Surface Engineering of Mn<sub>2</sub>O<sub>3</sub> for Potential Light-Harvesting Applications*, P. Kar, S. Sardar, S. Ghosh, M. R. Parida, B. Liu, O. F. Mohammed, P. Lemmens, and S. K. Pal, *Journ. of Materials Chemistry C* **3**, 8200 (2015).

229) *Features of the magnetic properties of quasi-one-dimensional  $\beta$ -TeVO<sub>4</sub>*, Y. O. Savina, O. M. Bludov, V. A. Pashchenko, S. L. Gnatchenko, P. Lemmens, H. Berger, *Journ. Low Temp. Physics (FNT)* **41**, 1.4918572 (2015).

228) *Sensitization of an Endogenous Photosensitizer: Electronic Spectroscopy of Riboflavin in the Proximity of Semiconductor, Insulator and Metal Nanoparticles*, S. Chaudhuri, S. Sardar, D. Bagchi, S. Singha, P. Lemmens, and S. Pal, *Journ. of Phys. Chem., A* **119**, 4162 (2015).

227) *High pressure phase transition in FeTe<sub>2</sub>O<sub>5</sub>Cl*, Y. Kim, I. H. Choi, K. Y. Choi, P. Lemmens, and H. Berger, *Phys. Stat. Sol. B* **252**, 653 (2015).

226) *Ultrafast FRET at Fiber Tips: Potential Applications in Sensitive Remote Sensing of Molecular Interactions*, N. Polley, S. Singh, A. Giri, P. K. Mondal, P. Lemmens, and S. K. Pal, *Journ. Sensors and Actuators B, Chemical* **210**, 381 (2015).

225) *Interfacial Carrier Dynamics in PbS-ZnO Light Harvesting Assemblies and their Potential Implication in Photovoltaic/ Photocatalysis Application*, S. Sardar, P. Kar, S. Sarkar, P. Lemmens, K. Pal, *Solar Energy Materials and Solar Cells.* **134**, 400 (2015).

224) *Direct Observation of Key Photoinduced Dynamics in a Potential Nano-delivery Vehicle of Cancer Drugs*, S. Sardar, S. Chaudhuri, P. Kar, S. Sarkar, P. Lemmens, and S. K. Pal, *J. Phys. Chem. Chem. Phys.* **17**, 166 (2015).

## 2014

223) *Coexistence of localized and collective magnetism in the coupled spin-tetrahedra system Cu<sub>4</sub>Te<sub>5</sub>O<sub>12</sub>Cl<sub>4</sub>*, K.Y. Choi, S. Do, P. Lemmens, J. van Tol, J. Shin, G.S. Jeon, Y. Skourski, J.-S. Rhyee, H. Berger, *Phys. Rev. B* **90**, 184402 (2014).

222) *Ultrasound study of FeCr<sub>2</sub>S<sub>4</sub> in high magnetic fields*, V. Felea, S. Yasin, A. Günther, J. Deisenhofer, H.-A. Krug von Nidda, E.-W. Scheidt, D. V. Quach, J. R. Groza, S. Zherlitsyn, V. Tsurkan, P. Lemmens, J. Wosnitza, and A. Loidl, *J. Phys.: Cond. Matter* **26**, 486001 (2014).

221) *A Magnetic Analogue to the Isotope Effect by Two Magnons Raman Scattering in (Ca,La)<sub>1</sub>(Ba,La)<sub>2</sub>Cu<sub>3</sub>O<sub>y</sub>*, D. Wulferding, M. Shay, G. Drachuck, Z. Salman, P. Lemmens, and A. Keren, *Phys. Rev. B* **90**, 104511 (2014).

220) *Surface Engineering for Controlled Nanocatalysis: Key Dynamical Events from Ultrafast Electronic Spectroscopy*, N. Goswami, S. Chaudhuri, A. Giria, P. Lemmens, and S. K. Pal, *Journ. Phys. Chem. C* **118**, 23434 (2014).

219) *Proximity to a commensurate charge modulation in IrTe<sub>2-x</sub>Se<sub>x</sub> (x=0 and 0.45) revealed by Raman spectroscopy*, A. Glamazda, K.-Y. Choi, P. Lemmens, J. J. Yang, S.-W. Cheong, *New Journ. Phys.* **16**, 093061 (2014).

218) *Spin dynamics and magnetoelectric properties of the coupled-spin tetrahedral compound Cu<sub>2</sub>Te<sub>2</sub>O<sub>5</sub>Cl<sub>2</sub>*, T. Besara, E. S. Choi, K.-Y. Choi, P. L. Kuhns, A. P. Reyes, P. Lemmens, H. Berger, and N. S. Dalal, *Phys. Rev. B* **90**, 054418 (2014).

217) *Collective Excitations in the Metallic Triangular Antiferromagnet PdCrO<sub>2</sub>*, A. Glamazda, W.-J. Lee, S. H. Do and K.-Y. Choi, P. Lemmens, J. van Tol, J.W. Jeong and H.-J. Noh, *Phys. Rev. B* **90**, 045122 (2014).

216) *Crystal structure and magnetic properties of the  $S=1/2$  quantum spin system  $Cu_7(TeO_3)_6F_2$  with mixed dimensionality*, Sh. Hua, A. Mace, M. Johnsson, V. Gnezdilov, P. Lemmens, J. Tapp, A. Möller, *Inorganic Chemistry*, DOI: 10.1021/ic5009686 (2014).

215) *The solid solution  $(Co_{1-x}Ni_x)_3Sb_4O_6F_6$* , Sh. Hu, M. Johnsson, P. Lemmens, D. Schmid, D. Menzel, J. Tapp, A. Möller, *Chem. Mater.* **26**, 3631 (2014).

214) *Enhanced quasiparticle dynamics of quantum well states: the giant Rashba polar semiconductor BiTeI and topological insulators*, V. Gnezdilov, P. Lemmens, D. Wulferding, A. Möller, P. Recher, H. Berger, R. Sankar, F. C. Chou, *Phys. Rev. B* **89**, 195117 (2014).

213) *Ultrafast Dynamics of Solvation and Charge Migration in a DNA-based Biomaterial*, S. Choudhury, S. Batabyal, T. Mondol, D. Sao, P. Lemmens, and S.-K. Pal, *Chemistry, An Asian Journal* **9**, 1395 (2014).

212) *Effects of hole dopings on magnetic and lattice excitations in  $Sr_2Ir_{1-x}Ru_xO_4$  with  $(x=0 - 0.2)$* , A. Glamazda, W.-J. Lee, and K.-Y. Choi, P. Lemmens, H. Y. Choi, N. Lee, and Y. J. Choi, *Phys. Rev. B* **89**, 104406 (2014).

### 2013

211) *Intrinsic Antiferromagnetic Coupling Underlies CMR Effect: Role of Correlated Polarons*, V. Moshnyaga, A. Belenchuk, S. Hühn, C. Kalkert, M. Jungbauer, S. Merten, K.-Y. Choi, P. Lemmens, K. Samwer, *Phys. Rev. B* **89**, 024420 (2013).

210) *Magnetic, structural, and electronic properties of the multiferroic compound  $FeTe_2O_5Br$  with geometrical frustration*, K.-Y. Choi, P. Lemmens, J. v. Tol, H. Berger, *J. Phys.: Cond. Mat.* **26**, 086001 (2013).

209) *Lattice and orbital fluctuations in  $TiPO_4$* , D. Wulferding, P. Lemmens, K.-Y. Choi, Y. G. Pashkevich, J. M. Law, R. K. Kremer, R. Glaum, *Phys. Rev. B* **88**, 205136 (2013).

208) *Spin-lattice coupled critical fluctuations in the layered compound  $Na_xCoO_2$* , P. Lemmens, V. Gnezdilov, G. J. Shu, L. Alff, C. T. Lin, B. Keimer, F. C. Chou, *Phys. Rev. B* **88**, 195151 (2013).

207) *Raman study of the Verwey transition in magnetite thin films*, M. B. Yazdi, K.-Y. Choi, D. Wulferding, P. Lemmens, L. Alff, *New J. Phys.* **15**, 103032 (2013).

206) *Specific features of electron spin resonance in quasi-1D magnet  $\beta$ - $TeVO_4$* , Yu. Savina, A. Bludov, V. Pashchenko, S. Gnatchenko, A. Stepanov, P. Lemmens, *Magn. Res. in Sol.* **15**, 13201 (2013)

205) *Competing lattice fluctuations and magnetic excitations in  $CuO$* , K.-Y. Choi, W.-J. Lee, A. Glamazda, P. Lemmens, D. Wulferding, Y. Sekio, T. Kimura, *Phys. Rev. B* **87**, 184407 (2013).

204) *Charge gap and charge-phonon coupling in  $LuFe_2O_4$* , A. Glamazda, K.-Y. Choi, P. Lemmens, D. Wulferding, S. Park, S.-W. Cheong, *Phys. Rev. B* **87**, 144416 (2013).

203) *Evidence for Dimer Crystal Melting in the Frustrated Spin-Ladder  $BiCu_2PO_6$* , K.-Y. Choi, J. W. Hwang, P. Lemmens, D. Wulferding, G. J. Shu, F. C. Chou, *Phys. Rev. Lett.* **110**, 117204 (2013).

202) *Interplay between lattice and spin degrees of freedom in the iron selenide superconductor FeSe*, V. Gnezdilov, Yu. G. Pashkevich, P. Lemmens, D. Wulferding, D. Chareev, A. Vasiliev, Phys. Rev. B **87**, 144508 (2013).

## 2012

201) *Spin-lattice coupling in frustrated Antiferromagnet ZnCr<sub>2</sub>Se<sub>4</sub> probed by Ultrasound*, V. Felea, S. Yasin, A. Günther, J. Deisenhofer, H.-A. Krug von Nidda, S. Zherlitsyn, V. Tsurkan, P. Lemmens, J. Wosnitza, A. Loidl, Phys. Rev. B **86**, 104420 (2012).

200) *Anomalous magnetic excitations in the s=3/2 distorted triangular antiferromagnet  $\alpha$ -CaCr<sub>2</sub>O<sub>4</sub>*, D. Wulferding, K.-Y. Choi, P. Lemens, A. N. Ponomaryov, J. van Tol, A. T. M. N. Islam, S. Toth, B. Lake, J. Phys.: Condens. Matter **24** (2012) 435604.

199) *Spin state of iron - controlling parameter of iron containing HTSC: dependence of ground state energy, phonon energies and positions of atoms on spin state of iron in FeTe*, Yu. G. Pashkevich, T. N. Shevtsova, A. A. Gusev, V. P. Gnezdilov, P. Lemmens, Journ. Low Temp. Physics (FNT) **38**, 900 (2012).

198) *Ultrafast excited state deactivation of doped porous anodic alumina membranes*, A. Makhal, S. Sarkar and S. Pal, H.-D. Yan, D. Wulferding, F. Cetin, and P. Lemmens, Nanotechnology **23**, 305705 (2012).

197) *Dynamical lattice instability versus spin liquid state in a frustrated spin chain system*, V. Gnezdilov, P. Lemmens, Yu. G. Pashkevich, D. Wulferding, I. V. Morozov, O. S. Volkova, A. Vasiliev, Phys. Rev. B **85**, 214403 (2012).

196) *Crossover from coherent to incoherent scattering in the spin orbit dominated compound Sr<sub>2</sub>IrO<sub>4</sub>*, M. F. Cetin, P. Lemmens, V. Gnezdilov, D. Wulferding, D. Menzel, T. Takayama, K. Ohashi, and H. Takagi, Phys. Rev. B **85**, 195148 (2012).

195) *New Perspectives for Cuprate Research: The CLBLCO Single Crystal*, G. Drachuck, M. Shay, G. Bazalitsky, Z. Salman, A. Amato, Ch. Niedermayer, D. Wulferding, P. Lemmens, and A. Keren, Journ. Supercond. and Nov. Magn., DOI: 10.1007/s10948-012-1669-z (2012).

194) *Analysis of low-frequency IR spectrum of the cubic noncentrosymmetric ferrimagnet Cu<sub>2</sub>OSeO<sub>3</sub>*, V. Kurnosov, V. Tsapenko, V. Gnezdilov, P. Lemmens, and H. Berger, Journ. Low Temp. Physics (FNT) **38**, 627 (2012).

193) *Phononic and magnetic excitations in the quasi-one-dimensional Heisenberg antiferromagnet KCuF<sub>3</sub>*, V. Gnezdilov, J. Deisenhofer, P. Lemmens, D. Wulferding, O. Afanasiev, P. Ghigna, A. Loidl, and A. Yeremenko, Journ. Low Temperature Physics **38**, 538 (2012).

192) *Long wavelength helimagnetic order and skyrmion lattice phase in Cu<sub>2</sub>OSeO<sub>3</sub>*, T. Adams, A. Chacon, M. Wagner, A. Bauer, G. Brandl, B. Pedersen, H. Berger, P. Lemmens, and C. Pfleiderer, Phys. Rev. Lett. **108**, 237204 (2012).

191) *Tailoring defect structure and optical absorption of porous anodic aluminum oxide membranes*, H.-D. Yan, P. Lemmens, D. Wulferding, J. Shi, K. D. Becker, C. T. Lin, A. Lak and M. Schilling, Journ. Mat. Chem. Phys. **135**, 206 (2012).

190) *Coupling of spin and lattice modes in the S=1/2 two-dimensional antiferromagnet K<sub>2</sub>V<sub>3</sub>O<sub>8</sub> with magneto-dielectric couplings*, K.Y. Choi, P. Lemmens, V.P. Gnezdilov, B. C. Sales, M. D. Lumsden, Phys. Rev. B **85**, 144434 (2012).

189) *Low dimensional magnetism in the spin-1/2 chain systems  $\alpha$ - and  $\beta$ -TeVO<sub>4</sub>*, V. P. Gnezdilov, P. Lemmens, D. Wulferding, Y.G. Pashkevich, K.V. Lamonova, K.Y. Choi, O. Afanasiev, S. L. Gnatchenko, H. Berger, *Journ. Low. Temp. Physics (FNT)* **38**, 715 (2012).

188) *Ligand Exchange at the Liquid-Liquid Interface: Preparation of Water Soluble L-arginine Capped CdSe/Zns QDs and their Interaction with Synthetic DNA*, A. Giri, N. Goswami, P. Lemmens and S. K. Pal, *Nanomat. Mat. Res. Bulletin* **47**, 1912 (2012).

187) *Coherent Manipulation of Electron Spins in Cu<sub>3</sub> Spin Triangle Molecule Deposited in Nanoporous Silicon*, K.-Y. Choi, Zh. Wang, H. Nojiri, H. v. Tol, P. Kumar, P. Lemmens, U. Kortz, N. S. Dalal, *Phys. Rev. Lett.* **108**, 067206 (2012).

186) *Tuning the spin dynamics of kagome systems*, D. Wulferding, P. Lemmens, H. Yoshida, Y. Okamoto, and Z. Hiroi, *J. Phys.: Condens. Matter* **24**, 185602 (2012).

185) *High-density array of Au nanowires coupled by plasmon modes*, H.-D. Yan, P. Lemmens, J. Ahrens, M. Bröring, S. Burger, W. Daum, G. Lilienkamp, S. Korte, A. Lak, M. Schilling, *Acta Phys. Sin.* **61**, No. 23, 237105 (2012).

184) *Extension of the zinc paratacamite phase diagram - Probing the effect of spin vacancies in a S = 1/2 kagome antiferromagnet*, M. A. de Vries, D. Wulferding, P. Lemmens, J. S. Lord, A. Harrison, A. Olariu, F. Bert, and P. Mendels, *Phys. Rev. B* **85**, 014422 (2012).

183) *Low temperature magnetic and thermal properties of the frustrated two-dimensional S=1 compound Ni<sub>5</sub>(TeO<sub>3</sub>)<sub>4</sub>Cl<sub>2</sub>*, E. Khatsko, S. V. Nizhankovskii, Gnatchenko, A. Zaleski, P. Lemmens, and H. Berger, *Journ. Low Temp. Physics (FNT)* **37**, 1050 (2012).

## 2011

182) *Single crystal growth and effect of doping on structural, transport and magnetic properties of A<sub>1-x</sub>K<sub>x</sub>Fe<sub>2</sub>As<sub>2</sub> (A=Ba, Sr)*, G. L. Sun, D. L. Sun, M. Konuma, P. Popovich, A. Boris, J. B. Peng, K.-Y. Choi, P. Lemmens, and C. T. Lin, *Journ. of Supercond. and Novel Magn.* **24**, 1773 (2011).

181) *Helical fluctuations in the Raman response of the topological insulator Bi<sub>2</sub>Se<sub>3</sub>*, V. Gnezdilov, Yu. G. Pashkevich, H. Berger, E. Pomjakushina, K. Conder, P. Lemmens, *Phys. Rev. B* **84**, 195118 (2011).

180) *Crystal Structure and Magnetic Properties of Two New Antiferromagnetic Spin Dimer Compounds; FeTe<sub>3</sub>O<sub>7</sub>X (X = Cl, Br)*, D. Zhang, R. K. Kremer, P. Lemmens, K.-Y. Choi, J. Liu, M.-H. Whangbo, H. Berger, Y. Skourski, M. Johnsson, *Journ. Inorg. Chem.* **50**, 12877 (2011).

179) *Magnetic properties of the antiferromagnetic spin-1/2 chain system  $\beta$ -TeVO<sub>4</sub>*, Yu. Savina, A. Bludov, V. Pashchenko, S.L. Gnatchenko, P. Lemmens, and H. Berger, *Phys. Rev. B* **84**, 104447 (2011).

178) *Anomalous low-energy phonons in nearly tetragonal BiFeO<sub>3</sub> thin films*, K.-Y. Choi, S. H. Do, P. Lemmens, D. Wulferding, C. S. Woo, J. H. Lee, K. Chu, and C.-H. Yang, *Phys. Rev. B* **84**, 132408 (2011).

177) *Coupled spin-lattice fluctuations in a compound with orbital degrees of freedom: the Cr based dimer system Sr<sub>3</sub>Cr<sub>2</sub>O<sub>8</sub>*, D. Wulferding, P. Lemmens, K.-Y. Choi, Yu. G. Pashkevich, V.



Gnezdilov, J. Deisenhofer, D. Quintero-Castro, A.T.M. N. Islam, and B. Lake, Phys. Rev. B **84**, 064419 (2011).

176) *Magnetoresistivity in CoFe<sub>2</sub>O<sub>4</sub>-BaTiO<sub>3</sub> composites produced by Spark Plasma Sintering*, M. Stingaciu, R. K. Kremer, P. Lemmens, and M. Johnsson, Appl. Phys. Lett. **110**, 044903 (2011).

175) *Magneto-structural transition in a frustrated magnet at high fields*, V. Tsurkan, S. Zherlitsyn, V. Felea, S. Yasin, Yu. Skourski, J. Deisenhofer, H.-A. Krug von Nidda, P. Lemmens, J. Wosnitza, and A. Loidl, Phys. Rev. Lett. **106**, 247202 (2011).

174) *Anomalous optical phonons in FeTe pnictides: spin state, magnetic order, and lattice anharmonicity*, V. Gnezdilov, Yu. Pashkevich, P. Lemmens, A. Gusev, K. Lamonova, T. Shevtsova, I. Vitebskiy, O. Afanasiev, S. Gnatchenko, V. Tsurkan, J. Deisenhofer, and A. Loidl, Phys. Rev. B **83**, 245127 (2011).

173) *Evidence for local lattice distortions in giant magnetocapacitive CdCr<sub>2</sub>S<sub>4</sub>*, V. Gnezdilov, P. Lemmens, Yu. G. Pashkevich, P. Scheib, Ch. Payen, K. Y. Choi, J. Hemberger, A. Loidl, V. Tsurkan, Phys. Rev. B **84**, 045106 (2011).

172) *Magnetic phase diagram of multiferroic MnWO<sub>4</sub> probed by ultrasound*, V. Felea, P. Lemmens, Yasin, S. Zherlitsyn, K.Y. Choi, C.T. Lin, Ch. Payen, J. Phys.: Condens. Matter **23**, 216001 (2011).

171) *Interplay of Spin and Lattice Degrees of Freedom in the Frustrated Antiferromagnet CdCr<sub>2</sub>O<sub>4</sub>: High-field and Temperature Induced Anomalies of the Elastic Constants*, S. Bhattacharjee, S. Zherlitsyn, O. Chiatti, A. Sytcheva, J. Wosnitza, R. Moessner, M.E. Zhitomirsky, P. Lemmens, V. Tsurkan, A. Loidl, Phys. Rev. B **83**, 184421 (2011).

170) *Critical spin dynamics of the S=1/2 spin chain compound CuSe<sub>2</sub>O<sub>5</sub>*, K.-Y. Choi, P. Lemmens, and H. Berger, Phys. Rev. B **83**, 174413 (2011).

169) **Editors Suggestion** *Weak first order quantum phase transition in a spin tetrahedron system without lattice contribution*, X. Wang, K. Syassen, M. Johnsson, R. Moessner, K.-Y. Choi, and P. Lemmens, Phys. Rev. B **83**, 134403 (2011).

168) **[Review]** *Optical Techniques for Systems with Competing Interactions*, J. Deisenhofer and P. Lemmens, in "Introduction to Highly Frustrated Magnetism", Eds. C. Lacroix, P. Mendels and F. Mila, Springer Series in Solid-State Sciences, 2011, Volume **164**, Part 2, 107-128, Springer, New York.

## 2010

167) *Manipulation of Spontaneous Emission Dynamics of Organic Dyes in the Porous Silicon Matrix*, A. Makhal, S. S. Sinha, P. Kumar, P. Lemmens and S. K. Pal, Journ. of Fluoresc. **20**, 283 (2010).

166) *Interplay of thermal and quantum spin fluctuations in the kagome lattice compound Herbertsmithite*, D. Wulferding, P. Lemmens, P. Scheib, J. Roeder, P. Mendels, Sh. Chu, T.-H. Han, Y. S. Lee, Phys. Rev. B **82**, 144412 (2010).

165) *Inhomogeneous magnetic cluster states in the magnetoresistance material Lu<sub>2</sub>V<sub>2</sub>O<sub>7</sub>*, K.-Y. Choi, W. Zhenxing, P. Lemmens, H. D. Zhou, J. van Tol, N. Dalal, and C. R. Wiebe, Phys. Rev. B **82**, 054430 (2010).

164) *Structural anomalies and the orbital ground state in FeCr<sub>2</sub>S<sub>4</sub>*, V. Tsurkan, O. Zaharko, F. Schrettle, Ch. Kant, J. Deisenhofer, H.-A. Krug von Nidda, V. Felea, P. Lemmens, J. Groza, D. Quach, F. Gozzo, and A. Loidl, Phys. Rev. B **81**, 184426 (2010).

163) *Magnetoelectricity in the ferrimagnetic Cu<sub>2</sub>OSeO<sub>3</sub>: symmetry analysis and Raman scattering study*, V.P. Gnezdilov, K.V. Lamonova, Y.G. Pashkevich, P. Lemmens, H. Berger, F. Bussy, S.L. Gnatchenko, Journ. Low. Temp. Physics (FNT), **36**, N 6, 688 (2010).

162) *Self-energy effects and electron-phonon coupling in Fe-As superconductors*, K.-Y. Choi, P. Lemmens, I. Eremin, G. Zwicknagl, H. Berger, G. L. Sun, D. L. Sun, and C. T. Lin, J. Phys.: Condens. Matter **22**, 115802 (2010).

161) *Synthesis, crystal structure and magnetic properties of the copper selenite chloride: Cu<sub>5</sub>(SeO<sub>3</sub>)<sub>4</sub>Cl<sub>2</sub>*, D. Zhang, H. Berger, R. K. Kremer, D. Wulferding, P. Lemmens, M. Johnsson, Inorg. Chem. **49**, 9683-9688 (2010).

160) *Microwave absorption in the frustrated ferrimagnet Cu<sub>2</sub>OSeO<sub>3</sub>*, M. I. Kobets, E. N. Khatsko, S. L. Gnatchenko, A. I. Rykova, P. Lemmens, D. Wulferding, H. Berger, Jour. Low. Temp. Physics (FNT) **36**, 223 (2010).

159) *Inside Cover: A Molecular Magnet Confined in the Nanocage of a Globular Protein*, R. K. Mitra, P. K. Verma, D. Wulferding, D. Menzel, T. Mitra, A. M. Todea, P. Lemmens, A. Müller, S. K. Pal, ChemPhysChem **11**, 318 (2010).

158) *A Molecular Magnet confined in the Nanocage of a Globular Protein*, S. Pal, R. K. Mitra, P. K. Verma, D. Wulferding, D. Menzel, T. Mitra, A. M. Todea, P. Lemmens, A. Müller, ChemPhysChem **11**, 389 (2010).

157) *Light Harvesting Semiconductor Core-Shell Nanocrystal: Ultrafast Charge transport Dynamics of CdSe-ZnS Quantum Dots*, A. Makhil, H.-D. Yan, P. Lemmens and S. K. Pal, J. Phys. Chem. C **114**, 627 (2010).

156) *Lattice Instabilities in the Frustrated Magnet CdCr<sub>2</sub>O<sub>4</sub>: an Ultrasonic Study*, S. Zherlitsyn, O. Chiatti, A. Sytcheva, J. Wosnitzer, S. Bhattacharjee, R. Moessner, M. Zhitomirsky, P. Lemmens, V. Tsurkan, A. Loidl, Journ. Low Temp. Phys. **159**, 134 (2010).

## 2009

155) *Spin correlations and spin-phonon coupling in the frustrated pyrochlore magnets CdCr<sub>2</sub>O<sub>4</sub> and ZnCr<sub>2</sub>O<sub>4</sub>*, Ch. Kant, J. Deisenhofer, T. Rudolf, F. Mayr, F. Schrettle, V. Tsurkan, D. Wulferding, V. Gnezdilov, P. Lemmens, A. Loidl, Phys. Rev. B **80**, 214417 (2009).

154) *Interplay of electronic correlations and lattice instabilities in BaVS<sub>3</sub>*, K.-Y. Choi, D. Wulferding, H. Berger, and P. Lemmens, Phys. Rev. B **80**, 245108 (2009).

153) *Separation of the oxide and halide part in the oxohalide Fe<sub>3</sub>Te<sub>3</sub>O<sub>10</sub>Cl due to high Lewis acidity of the cations*, D. Zhang, M. Johnsson, H. Berger, R. K. Kremer, D. Wulferding, and P. Lemmens, Inorganic Chemistry **48**, 6599 (2009).

152) *Effect of HF concentration on physical and electronic properties of electrochemically formed nano-porous silicon*, P. Kumar, P. Lemmens, M. K. Ghosh, F. Ludwig, and M. Schilling, Journ. of Nanomaterials **2009**, 728957 (2009).

151) *Spectral sensitive phonon wipeout in a two-site Fe<sup>2+</sup> coordination polymer*, V. Gnezdilov, P. Lemmens, P. Scheib, M. Ghosh, Yu.G. Pashkevich, H. Paulsen, V. Schünemann, J. A. Wolny, G. Agustí, J. A. Real, Phys. Rev. B **79**, 045122 (2009).

150) *Magnetic Properties of the Layered Cobaltite NdBaCo<sub>2</sub>O<sub>5.50</sub>*, A. Jarry, H. Luetkens, Y.G. Pashkevich, M. Stingaciu, E. Pomjakushina, K. Conder, P. Lemmens, and H.-H. Klauss, Physica B **404**, 765 (2009).

149) *Anomalous frequency and intensity scaling of collective and local modes in a coupled spin tetrahedra system*, K. Y. Choi, H. Nojiri, N. S. Dalal, H. Berger, W. Brenig, P. Lemmens, Phys. Rev. B **79**, 024416 (2009).

148) *Iron/Nickel nanowire growth in Anodic Aluminum Oxide templates: Transfer of length scales and periodicity*, H.D. Yan, P. Lemmens, H. Dierke, S.C. White, F. Ludwig, M. Schilling, Journ. Phys.: Conf. Series **145**, 012079 (2009).

147) *Raman Scattering Study of a Two-Dimensional S = 1 Quantum Spin System Ni<sub>5</sub>(TeO<sub>3</sub>)<sub>4</sub>Cl<sub>2</sub>*, A.V. Peschanskii, V.P. Gnezdilov, V.I. Fomin, V.V. Eremenko, P. Lemmens, K.-Y. Choi, and H. Berger, Ukrainian Physical Journ. **45**, 205 (2009).

## 2008

146) *Electron-phonon interaction in the lamellar cobaltate Na<sub>x</sub>CoO<sub>2</sub>*, A. Donkov, M. M. Korshunov, I. Eremin, P. Lemmens, V. Gnezdilov, F. C. Chou, C. T. Lin, Phys. Rev. B **77**, 100504(R) (2008).

145) *Lattice and electronic anomalies of CaFe<sub>2</sub>As<sub>2</sub> studied by Raman spectroscopy*, K.-Y. Choi, D. Wulferding, P. Lemmens, S. L. Bud'ko, and P. C. Canfield, Phys. Rev. B **78**, 212503 (2008).

144) *Lattice anomalies and magnetic excitations of the spin web compound Cu<sub>3</sub>TeO<sub>6</sub>*, K.Y. Choi, P. Lemmens, E.S. Choi, and H. Berger, Journ. Phys.: Cond. Matter **20**, 505214 (2008).

143) *Magnetic crossover and complex magnetic excitation spectrum of the ferromagnetic /antiferromagnetic spin-1/2 chain system α-TeVO<sub>4</sub>*, V. Gnezdilov, P. Lemmens, A. A. Zvyagin, V. O. Cheranovskii, K. Lamonova, Yu. G. Pashkevich, R. K. Kremer, H. Berger, Phys. Rev. B **78**, 184407 (2008).

142) *Tuning the pore wall morphology of mesoporous silicon from branchy to smooth, tubular by chemical treatment*, P. Kumar, T. Hoffman, P. Huber, P. Scheib, and P. Lemmens, Journ. Appl. Physics **103**, 024303 (2008).

141) *Spin state and orbital moments across the metal-insulator-transition of REBaCo<sub>2</sub>O<sub>5.5</sub> investigated by XMCD*, M. Lafkioti, E. Goering, S. Gold, G. Schütz, S. N. Barilo, S.V. Shiryayev, G. L. Bychkov, V. Hinkov, P. Lemmens, J. Deisenhofer, A. Loidl, New Journ. Phys. **10**, 123030 (2008).

140) *Anomalous low temperature behaviour of the Co dimers in the oxo-halide CoSb<sub>2</sub>O<sub>3</sub>Br<sub>2</sub>*, Z. Hugonin, M. Johnsson, S. Lidin, D. Wulferding, P. Lemmens and R. K. Kremer, Journ. Solid State Chem. **181**, 2776 (2008).

139) *Thermodynamic properties of the kagome-like compound YBaCo<sub>4-x</sub>Zn<sub>x</sub>O<sub>7</sub> with magnetic dilution*, M. Markina, T. Vasilchikova, A. Vasiliev, P. Lemmens, M. Valldor, Journ. Magn. Magn. Mat. **320**, e434 (2008).

138) *Magnetic and resonance properties of the two-dimensional S=1 compound  $Ni_5(TeO_3)_4Cl_2$  with frustrated geometry*, S. Gnatchenko, M. Kobets, E. Khatsko, M. Baran, R. Szymczak, P. Lemmens, and H. Berger, *Journ. Low. Temp. Physics (FNT)* **34**, Nr 8, 630 (2008).

137) *Microscopic Evidence of Spin-State Order and Spin State Phase Separation in Layered Cobaltites  $RBaCo_2O_{5.5}$  with  $R=Y, Tb, Dy, \text{ and } Ho$* , H. Luetkens, M. Stingaciu, Yu. G. Pashkevich, K. Conder, E. Pomjakushina, A. A. Gusev, K. V. Lamonova, P. Lemmens, and H.-H. Klauss, *Phys. Rev. Lett.* **101**, 017601 (2008).

136) *Anomalous orbital dynamics in  $(La,Sr)MnO_4$  observed by Raman spectroscopy*, K.-Y. Choi, P. Lemmens, D. Heydhausen, G. Güntherodt, C. Baumann, R. Klingeler, P. Reutler, and B. Büchner, *Phys. Rev. B* **77**, 064415 (2008).

135) **[Review]** *Perovskites and thin films – crystallography and chemistry*, M. Johnsson and P. Lemmens, *J. Phys.: Cond. Matter* **20**, 264001 (2008).

## 2007

134) *Comment on "Raman spectroscopy study of  $Na_xCoO_2$  and superconducting  $Na_xCoO_2 \cdot yH_2O$ "*, P. Lemmens, P. Scheib, Y. Krockenberger, L. Alff, F. C. Chou, C. T. Lin, H.-U. Habermeier, and B. Keimer, *Phys. Rev. B* **75**, 106501 (2007).

133) *Comparative investigation of the coupled tetrahedra quantum spin systems  $Cu_2Te_2O_5X_2$ ,  $X=Cl, Br$  and  $Cu_4Te_5O_{12}Cl_4$* , R. Valenti, T. Saha-Dasgupta, H. O. Jeschke, B. Ramahan, H. Rosner, P. Lemmens, R. Takagi, M. Johnsson, *Physica C* **460**, 462 (2007).

132) *Spin state transformation of a 3d ion in the pyramidal environment and under lattice distortions*, E.S. Zhitlukhina, K.V. Lamonova, S.O. Orel, P. Lemmens, and Yu.G. Pashkevich, *Journ. Phys.: Cond. Matter* **19**, 156216 (2007).

131) *Oxygen Isotope Effect on the Magnetic Phase Transition Temperatures of the Layered Cobaltite  $HoBaCo_2O_{5.47}$* , H. Luetkens, M. Stingaciu, Y.G. Pashkevich, P. Lemmens, E. Pomjakushina, K. Conder, D. Cheptiakov, H.-H. Klauss, *Journ. Magn. Mag. Mat.* **310**, 1566 (2007).

130) *Chemical Pressure Effect on the Magnetic Order in the Weakly Coupled Spin Tetrahedra System  $Cu_2Te_2O_5(Br_xCl_{1-x})_2$* , C. Mennerich, H.-H. Klauss, D. Mienert, A. Bosse, F.J. Litterst, P. Lemmens, D. Baabe, H. Luetgens, R. Scheuermann, M. Johnsson, *Journ. Phys. Soc. Jpn.* **76A**, 104-105 (2007).

129) *Approaching the ground state of the kagomé antiferromagnet*, W. Schweika, M. Valldor, and P. Lemmens, *Phys. Rev. Lett.* **98**, 067201 (2007).

128) *Anomalous electronic, phonon, and spin excitations in the chalcogenide spinel  $FeCr_2S_4$* , K.-Y. Choi, P. Lemmens, P. Scheib, V. Gnezdilov, Yu.G. Pashkevich, J. Hemberger, A. Loidl, V. Tsurkan, *Journ. Phys.: Cond. Matter* **19**, 145260 (2007).

127) *Structural phase transition in two-dimensional tetramer-cuprate  $Na_5RbCu_4(AsO_4)_4Cl_2$* , V. Gnezdilov, V. Bedarev, Yu. Pashkevich, P. Lemmens, S. Zvyagin, S. Gnatchenko, M. Pashchenko, X. Mo, W. Queen, and S.-J. Hwu, *Journ. Low. Temp. Phys. (FNT)* **8**, 879 (2007).

## 2006

126) **[Review]** *Crystallography and Chemistry of Perovskites*, M. Johnsson and P. Lemmens, in "Handbook of Magnetism and Advanced Magnetic Materials", H. Kronmüller and S. Parkin

(eds), Volume 4: Novel Materials, John Wiley & Sons Ltd, Chichester, UK, pp 2098-2106 (2006).

125) *Crystal structure and magnetic properties of  $\text{FeTe}_2\text{O}_5\text{X}$  ( $\text{X}=\text{Cl}, \text{Br}$ ) – a frustrated spin cluster compound with a new  $\text{Te}(\text{IV})$  coordination polyhedron*, Richard Becker, Mats Johansson, R.K. Kremer, Hans-Henning Klauss, and Peter Lemmens, *Journ. Amer. Chem. Soc.* **128**, 15469 (2006).

124) *Orbital fluctuating state in ferromagnetic insulating  $\text{LaMnO}_{3+d}$  ( $0.085 < d < 0.125$ ) studied using Raman spectroscopy*, K.-Y. Choi, Yu. G. Pashkevich, V. P. Gnezdilov, G. Güntherodt, A. V. Yeremenko, D. A. Nabok, V. I. Kamenev, S. N. Barilo, S. V. Shiryayev, A. G. Soldatov, and P. Lemmens, *Phys. Rev. B* **74**, 064406 (2006).

123) *Investigation of the novel oxohalogenide  $\text{Cu}_4\text{Te}_5\text{O}_{12}\text{Cl}_4$  with  $\text{Cu}(\text{II})$  tetrahedra*, R. Takagi, M. Johansson, V. Gnezdilov, R. K. Kremer, W. Brenig and P. Lemmens, *Phys. Rev. B* **74**, 014413 (2006).

122) *Sodium Cobaltates: Crystal Growth, Structure, Thermoelectricity, and Superconductivity*, C.T. Lin, D.P. Chen, A. Maljuk, and P. Lemmens, *Journ. of Cryst. Growth.* **292**, 422-428 (2006).

121) *Anomalous electronic Raman scattering in  $\text{Na}_x\text{CoO}_2 \cdot y\text{H}_2\text{O}$* , P. Lemmens, K.-Y. Choi, V. Gnezdilov, E.Ya. Sherman, D.P. Chen, C.T. Lin, F.C. Chou, and B. Keimer, *Phys. Rev. Lett.* **96**, 167204 (2006).

120) *Charge density waves in  $\text{Sr}_{14-x}\text{Ca}_x\text{Cu}_{24}\text{O}_{41}$ : electronic correlations vs. structural effects*, K.Y. Choi, M. Grove, P. Lemmens, M. Fischer, G. Güntherodt, U. Ammerahl, B. Büchner, G. Dhalenne, A. Revcolevschi, and J. Akimitsu, *Phys. Rev. B* **73**, 104428 (2006).

119) *Low temperature mixed spin state of  $\text{Co}^{3+}$  in  $\text{LaCoO}_3$  evidenced from local lattice distortions*, V.P. Gnezdilov, V. Fomin, Yu.G. Pashkevich, P. Lemmens, K.-Y. Choi, S.V. Shiryayev, G.L. Bychkov, S.N. Barilo, *Low Temp. Physics (FNT)* **32**, 162 (2006).

118) *Magnetic excitations and phonons in the spin-chain compound  $\text{NaCu}_2\text{O}_2$* , K.Y. Choi, V.P. Gnezdilov, P. Lemmens, L. Capogna, M.R. Johansson, M. Sofin, A. Maljuk, M. Jansen, and B. Keimer, *Phys. Rev. B* **73**, 094409 (2006).

117) *Crystal structure and magnetic properties of the coupled spin dimer compound  $\text{SrCu}_2(\text{TeO}_3)_2\text{Cl}_2$* , R. Takagi, M. Johansson, R. K. Kremer, P. Lemmens, *Journ. Solid State Chem.* **179**, 3763 (2006).

116) *Structural and magnetic dimers in the spin-gapped system  $\text{CuTe}_2\text{O}_5$* , J. Deisenhofer, R. M. Eremina, A. Pimenov, T. Gavrilova, H. Berger, M. Johansson, P. Lemmens, H.-A. Krug von Nidda, A. Loidl, K.-S. Lee, and M.-H. Whangbo, K.-S. Lee, and M.-H. Whangbo, *Phys. Rev. B* **74**, 174421 (2006).

## 2005

115) **[Review]** *Scattering: Inelastic Scattering Technique - Raman*, P. Lemmens and K.Y. Choi, in *“Encyclopaedia of Condensed Matter Physics”*, Eds. G. Bassani, G. Liedl, P. Wyder, Elsevier Publishers, Amsterdam (2005).

114) *The effect of pressure on the structural properties of the spin-tetrahedra compound  $\text{Cu}_2\text{Te}_2\text{O}_5\text{Br}_2$* , X. Wang, I. Loa, K. Syassen, P. Lemmens, M. Hanfland, and M. Johansson, *J. Phys.: Condens. Matter* **17**, 1-6 (2005).

113) *Orbiton-mediated multi-phonon scattering in  $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$* , K.Y. Choi, P. Lemmens, G. Güntherodt, Yu. G. Pashkevich, V.P. Gnezdilov, P. Reutler, L. Pinsard-Gaudart, B. Büchner, A. Revcolevschi, Phys. Rev. B **72**, 024301 (2005).

112) *Spin gap formation in the quantum spin systems  $\text{TiOX}$ ,  $X=\text{Cl}$  and  $\text{Br}$* , P. Lemmens, K.Y. Choi, R. Valenti, T. Saha-Dasgupta, E. Abel, Y.S. Lee, and F.C. Chou, New Journal of Physics **7**, 74 (2005).

111) *Interplay of triplets and lattice degree of freedom in the coupled spin dimer system  $\text{KCuCl}_3$* , K.-Y. Choi, A. Oosawa, H. Tanaka, P. Lemmens, Phys. Rev. B **72**, 024451 (2005).

110) *A Raman Study of Lattice Vibrations in II–VI Semiconductors Doped with 3d Elements*, V.I. Sokolov, F. Fillaux, F. Romain, P. Lemmens, and N.B. Gruzdev, Physics of the Solid State **47**, 1567-69 (2005).

109) *Crystal structure and magnetic properties of  $\text{Cu}_3(\text{TeO}_3)_2\text{Br}_2$  – a layered compound with a new  $\text{Cu(II)}$  coordination polyhedron*, R. Becker, M. Johnsson, R.K. Kremer, and P. Lemmens, J. Solid State Chem. **178**, 2024-29 (2005).

108) *Inelastic light scattering experiments on the coupled spin dimer system  $\text{Ti}_{1-x}\text{K}_x\text{CuCl}_3$* , K.-Y. Choi, A. Oosawa, H. Tanaka, and P. Lemmens, Progr. of Theor. Physics **159**, 195-199 (2005).

107) *Crystal structure and lattice dynamics of  $\text{SrCu}_2(\text{BO}_3)_2$  at high pressure*, I. Loa, F.X. Zhang, K. Syassen, P. Lemmens, W. Crichton, H. Kageyama, Y. Ueda, Physica B **359-361**, 980 (2005).

106) *Existence of orbital polarons in ferromagnetic insulating  $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$  ( $0.11 < x < 0.14$ ) revealed by giant phonon softening*, K.Y. Choi, P. Lemmens, G. Güntherodt, Yu. G. Pashkevich, V.P. Gnezdilov, P. Reutler, L. Pinsard-Gaudart, B. Büchner, A. Revcolevschi, Phys. Rev. B **71**, 174402 (2005).

105) *Phonon scattering and stability of  $\text{Na}_{0.5}\text{CoO}_2$* , X.N. Zhang, P. Lemmens, B. Keimer, D.P. Chen, C.T. Lin, K.Y. Choi, V. Gnezdilov, F.C. Chou, Physica B **359-361**, 424 (2005).

104) *Unusual criticality of  $\text{Cu}_2\text{Te}_2\text{O}_5\text{Br}_2$  under pressure*, J. Kreitlow, S. Süllow, D. Menzel, J. Schoenes, P. Lemmens, M. Johnsson, Journ. Mag. Mat. **290**, 959-961 (2005).

103) *Phonons and Magnons in stripe-ordered nickelates: A Raman scattering study*, V.P. Gnezdilov, V. Kurnosov, Yu.G. Pashkevich, P. Lemmens, J.M. Tranquada, K.-Y. Choi, G. Güntherodt, K. Nakajima, A. Yeremenko, Low Temp. Physics (FNT) **31** (2), 154-160 (2005).

102) *Study of intercalation/deintercalation of  $\text{Na}_x\text{CoO}_2 \cdot y\text{H}_2\text{O}$  single crystals*, C.T. Lin, D.P. Chen, P. Lemmens, X.N. Chang, A. Maljuk, and P.X. Zhang, Journ. of Cryst. Growth **275**, 606-616 (2005).

101) *Raman scattering measurements of the spin ladder compound  $(\text{C}_5\text{H}_{12}\text{N})_2\text{CuBr}_4$* , K.Y. Choi, V. Gnezdilov, B.C. Watson, M.W. Meisel, D.R. Talham, P. Lemmens, J. Phys.: Cond. Matter **17**, 4237 (2005).

**2004**

100) **[Review]** *Spin – Orbit – Topology, a triptych*, P. Lemmens and P. Millet, in “Quantum Magnetism”, Ed. U. Schollwöck, J. Richter, B.J.J. Farrell, R.F. Bishop, Springer, Heidelberg, „Lecture Notes in Physics“, Vol. 645 (2004).

99) **[Review]** *Light scattering of magnets in the proximity to quantum criticality*, P. Lemmens, in „Spectroscopy of Emergent Materials“, p. 173, Eds. E.C. Faulques, et al., Kluwer Academic Publishers, New York (2004).

98) *Coexistence of dimerization and long-range magnetic ordering in the double chain spin system  $\text{LiCu}_2\text{O}_2$ : Inelastic light scattering study*, K.-Y. Choi, S. Zvyagin, G. Cao, and P. Lemmens, Phys. Rev. B **69**, 104421 (2004).

97) *Raman studies of single and polycrystalline cobaltites  $\text{GdBaCo}_2\text{O}_{5+d}$  with  $d$  close to 0.5*, Yu.G. Pashkevich, V.P. Gnezdilov, P. Lemmens, K.-Y. Choi, K.V. Lamonova, A.A. Gusev, A.V. Yeremenko, G. Güntherodt, S.N. Barilo, S.V. Shiryayev, and G.L. Bychkov, in „Spectroscopy of Emergent Materials“, p. 195, ed. E.C. Faulques, et al., Kluwer Academic Publishers, New York (2004).

96) *Giant phonon softening in ferromagnetic  $\text{LaMnO}_{3+d}$* , Yu.G. Pashkevich, V.P. Gnezdilov, P. Lemmens, K.-Y. Choi, G. Güntherodt, A.V. Eremenko, S.N. Barilo, S.V. Shiryayev and A.G. Soldatov, in „Spectroscopy of Emergent Materials“, p. 185, ed. E.C. Faulques, et al., Kluwer Academic Publishers, New York (2004).

95) *Phonons and Magnons in  $\text{La}_{5/3}\text{Sr}_{1/3}\text{NiO}_4$  single crystal*, V. Gnezdilov, V. Kurnosov, Yu. Pashkevich, J. Tranquada, P. Lemmens, K.-Y. Choi, G. Güntherodt, A. Yeremenko, K. Nakajima, in „Spectroscopy of Emergent Materials“, p. 205, ed. E.C. Faulques, et al., Kluwer Academic Publishers, New York (2004).

94) *Random magnetism in the frustrated triangular spin ladder  $\text{KCu}_5\text{V}_3\text{O}_{13}$* , K.Y. Choi, P. Lemmens, J. Pommer, A. Ionescu, G. Güntherodt, S. Hiroya, H. Sakurai, K. Yoshimura, A. Matsuo, K. Kindo, Phys. Rev. B **70**, 174417 (2004).

93) *Analysis of the phonon spectrum in the titanium oxyhalide  $\text{TiOBr}$* , G. Caimi, L. Degiorgi, P. Lemmens, F.C. Chou, J. Phys.: Condens. Matter **16**, 5583 (2004).

92) *Single crystal growth and investigation of  $\text{Na}_x\text{CoO}_2$  and  $\text{Na}_x\text{CoO}_2 \cdot y\text{H}_2\text{O}$* , D.P. Chen, H.C. Chen, A. Maljuk, A. Kulakov, H. Zhang, P. Lemmens, and C.T. Lin, Phys. Rev. B **70**, 024506 (2004).

91) *Giant phonon softening in the pseudo-gap phase of  $\text{TiOCl}$* , P. Lemmens, K.Y. Choi, G. Caimi, L. Degiorgi, N.N. Kovaleva, A. Seidel, F.C. Chou, Phys. Rev. B **70**, 134429 (2004).

90) *Infrared optical properties of the spin-1/2 quantum magnet  $\text{TiOCl}$* , G. Caimi, L. Degiorgi, N.N. Kovaleva, P. Lemmens, F.C. Chou, Phys. Rev. B **69**, 125108 (2004).

89) *Magnetic exchange in a low-dimensional magnetic oxide  $(\text{Cu,Zn})_2\text{V}_2\text{O}_7$* , V. Kataev, J. Pommer, K.-Y. Choi, P. Lemmens, A. Ionescu, Yu. Pashkevich, K. Lamonova, A. Möller, A. Freimuth, G. Güntherodt, Journ. Mag. Mat. **272-276**, 933 (2004).

88) *Interplay of structural and electronic phase separation in single crystalline  $\text{La}_2\text{CuO}_{4+0.05}$  studied by Neutron and Raman scattering*, V.P. Gnezdilov, Yu.G. Pashkevich, J.M. Tranquada, P. Lemmens, G. Güntherodt, A.V. Yeremenko, S.N. Barilo, S.V. Shiryayev, L.A. Kurnevich, and P.M. Gehring, Phys. Rev. B **69**, 174508 (2004).

87) *Bulk antiferromagnetism in Na<sub>0.82</sub>CoO<sub>2</sub> single crystals*, S. Bayrakci, C. Bernhard, D. P. Chen, B. Keimer, R.K. Kremer, P. Lemmens, C. T. Lin, C. Niedermayer, and J. Stremper, *Phys. Rev. B* **69**, 100410 (2004).

86) *Phonon anomalies in lightly-doped manganites La<sub>1-x</sub>Sr<sub>x</sub>MnO<sub>3</sub> (x=0.09 and 0.11) near the CAF/FI phase boundary*, K.-Y. Choi, P. Lemmens, G. Güntherodt, Yu. G. Pashkevich, V. P. Gnezdilov, P. Reutler, B. Büchner, A. Revcolevschi, *Journ. Magn. Mater.* **272-276**, E305 (2004).

85) *Effect of Na content and hydration on the excitation spectrum of the cobaltite Na<sub>x</sub>CoO<sub>2</sub>yH<sub>2</sub>O*, P. Lemmens, V. Gnezdilov, N.N. Kovaleva, K.Y. Choi, H. Sakurai, E. Takayama-Muromachi, K. Takada, T. Sasaki, F.C. Chou, D.P. Chen, C.T. Lin and B. Keimer, *J. Phys.: Cond. Mat.* **16**, S857 (2004).

### 2003

84) **[Review]** *Magnetic Light Scattering in low-dimensional Quantum Spin Systems*, P. Lemmens, G. Güntherodt, and C. Gros, *Physics Rep.* **375**, 1-103 (2003).

83) **[Review]** *What can one learn from Raman Spectra of High Temperature Superconductors?* E.Ya. Sherman, O.V. Misochko, and P. Lemmens, in "Spectroscopy of High Temperature Superconductors", p. 97-157, Ed. N.M. Plakida, Taylor & Francis Inc, London and New York (2003).

82) *Spin dynamics of the spin dimer system TICuCl<sub>3</sub> probed by Raman spectroscopy*, K.-Y. Choi, G. Güntherodt, A. Oosawa, H. Tanaka, and P. Lemmens, *Phys. Rev. B* **68**, 174412 (2003).

81) *Crystal structure, magnetic properties and conductivity of CuSbTeO<sub>3</sub>Cl<sub>2</sub>*, R. Becker, M. Johnsson, R. Kremer, P. Lemmens, *Solid State Sci.* **5**, 1411 (2003).

80) *Magnetic Raman scattering of the ordered tetrahedral spin-1/2 clusters in Cu<sub>2</sub>Te<sub>2</sub>O<sub>5</sub>(Br<sub>1-x</sub>Cl<sub>x</sub>)<sub>2</sub> compounds*, J. Jensen, P. Lemmens, C. Gros, *Europhys. Lett.* **64**, 689-695 (2003).

79) *Strong anharmonicity and spin-phonon coupling in the quasi-two-dimensional quantum spin system SrCu<sub>2</sub>(BO<sub>3</sub>)<sub>2</sub>*, K.-Y. Choi, Yu.G. Pashkevich, K.V. Lamonova, H. Kageyama, Y. Ueda, P. Lemmens, *Phys. Rev. B* **68**, 104418 (2003).

78) *Ultrasonic attenuation on the Bose-Einstein transition in TICuCl<sub>3</sub>*, E.Ya. Sherman, P. Lemmens, B. Busse, A. Oosawa, H. Tanaka, *Phys. Rev. Lett.* **91**, 057201 (2003).

77) *Longitudinal magnon in the tetrahedral quantum spin system Cu<sub>2</sub>Te<sub>2</sub>O<sub>5</sub>Br<sub>2</sub> near quantum criticality*, C. Gros, P. Lemmens, M. Vojta, R. Valenti, K.-Y. Choi, H. Kageyama, Z. Hiroi, N.V. Mushnikov, T. Goto, M. Johnsson, P. Millet, *Phys. Rev. B* **67**, 174405 (2003).

76) *Crystal Structure and Magnetic Properties of a New Layered Quantum Spin System Ni<sub>5</sub>(TeO<sub>3</sub>)<sub>4</sub>X<sub>2</sub> (X=Cl, Br)*, M. Johnsson, K.W. Törnroos, P. Lemmens, P. Millet, *Journ. Chem. Mater.* **15**, 68-73 (2003).

75) *Electrochemical growth of rare-earth manganite single crystals and investigation of their properties*, S.V. Shiryayev, S.N. Barilo, G.L. Bychkov, D.D. Khalyavin, A.G. Soldatov, Yu.G. Pashkevich, V.P. Gnezdilov, P. Lemmens, G. Güntherodt, *Russian Journ. of Solid State Phys. (Fizika Tverdogo Tela)* **45**, N1 (2003).



74) *Spin dynamics in the Quantum Spin System  $KCu_5V_3O_{13}$* , H.-H. Klauss, P. Lemmens, M. Birke, D. Baabe, D. Mienert, A. Amato, J. Pommer, A. Ionescu, K.-Y. Choi, G. Güntherodt, H. Kageyama, Z. Hiroi, M. Takigawa, *Physica B* **326**, 436-439 (2003).

73) *Search for Quantum Criticality in the Spin Tetrahedra System  $Cu_2Te_2O_5(Br,Cl)_2$* , P. Lemmens, K.-Y. Choi, G. Güntherodt, M. Johnsson, P. Millet, F. Mila, R. Valenti, C. Gros, W. Brenig, *Physica B* **329-333**, 1049-1050 (2003).

72) *Interplay between structure and magnetism in the spin chain compound  $(Cu,Zn)_2V_2O_7$* , J. Pommer, V. Kataev, K.-Y. Choi, P. Lemmens, A. Ionescu, Yu. Pashkevich, A. Freimuth, G. Güntherodt, *Phys. Rev. B* **67**, 214410 (2003).

71) *Raman scattering study of  $Nd_{1-x}Sr_xMnO_3$  ( $x=0.3, 0.5$ )*, K.-Y. Choi, P. Lemmens, G. Güntherodt, M. Patabiraman, G. Rangarajan, V.P. Gnezdilov, G. Balakrishnan, D. McK. Paul, and M.R. Lees, *J. Phys.: Cond. Mat.* **15**, 3333 (2003).

70) *Phonon Raman scattering in  $LaMn_{1-x}Co_xO_3$  ( $x=0, 0.2, 0.3, 0.4$  and  $1.0$ )*, V.P. Gnezdilov, Yu.G. Pashkevich, A.V. Yeremenko, P. Lemmens, G. Güntherodt, S.V. Shiryayev, G.L. Bychkov, and S.N. Barilo, *Low Temperature Physics (FNT)* **29**, 1269-72 (2003).

## 2002

69) *Magnetism of a Tetrahedral Cluster-Chain*, W. Brenig, K.-W. Becker, P. Lemmens, *Physica B* **312**, 594-596 (2002).

68) *Measurements of Thermal Kinetic Characteristics of Film Structures*, Yu.M. Nikolaenko, Yu.G. Pashkevich, P. Lemmens, *Instr. and Exp. Techn.* **45**, (6) 853 (2002).

67) *Low-energy Singlets in the Excitation Spectrum of the Spin Tetrahedra System  $Cu_2Te_2O_5Br_2$* , P. Lemmens, K.-Y. Choi, A. Ionescu, J. Pommer, G. Güntherodt, R. Valenti, C. Gros, W. Brenig, M. Johnsson, P. Millet, F. Mila, *Journ. Phys. Chem. Solids* **63/6-8**, 1115-1117 (2002).

66) *Electronic Raman Scattering through the Stripe Ordering Transition in  $La_{2-x}Sr_xNiO_4$* , V.P. Gnezdilov, A.V. Yeremenko, Yu.G. Pashkevich, P. Lemmens, G. Güntherodt, J.M. Tranquada, D.J. Buttrey, K. Nakajima, *Low. Temp. Phys. (FNT)* **28**, 510 (2002).

65) *Polarized Raman scattering in single crystals of  $Nd_{0.7}Sr_{0.3}MnO_3$* , M. Patabiraman, G. Rangarajan, K.-Y. Choi, P. Lemmens, G. Güntherodt, G. Balakrishnan, D. McK. Paul, M.R. Lees, *Pramana – J. Phys. Vol.* **58**, 1013-1017 (2002).

64) *Quantum Phase Transition in the Dioptase Magnetic Lattice*, C. Gros, P. Lemmens, K.-Y. Choi, G. Güntherodt, M. Baenitz, H.H. Otto, *Europhys. Lett.* **60**, 276-280 (2002).

## 2001

63) **[Review]** *Niedrigdimensionale Übergangsmetalloxide – Faszinierende Physik zwischen Magnetismus und Supraleitung*, P. Lemmens, M. Fischer, M. Grove, J. Pommer, A. Ionescu, and G. Güntherodt, „Physik der Kondensierten Materie“, 1/2001, S. 25-31, ISSN-NR. 0179-079X.

62) *Structural Phase Transition in the 2D Spin Dimer Compound  $SrCu_2(BO_3)_2$* , K. Sparta, G.J. Redhammer, P. Roussel, G. Heeger, G. Roth, P. Lemmens, A. Ionescu, M. Grove, G. Güntherodt, F. Hüning, H. Lueken, H. Kageyama, K. Onizuka, Y. Ueda, *Euro. Phys. Journ. B* **19**, 507-516 (2001).

61) *Charge kinks as Raman Scatterers in quarter-filled ladders*, E. Ya. Sherman, C. Ambrosch-Draxl, P. Lemmens, G. Güntherodt, P.H.M. van Loosdrecht, Phys. Rev. B **63**, 224305 (2001).

60) *Evidence for an unconventional magnetic instability in the spin-cluster compound  $Cu_2Te_2O_5Br_2$* , P. Lemmens, K.-Y. Choi, E.E. Kaul, Ch. Geibel, C. Gros, R. Valenti, W. Brenig, K. Becker, F. Mila, M. Johnsson, P. Millet, Phys. Rev. Lett. **87**, 227201 (2001).

## 2000

59) *Optical Studies of the incommensurate charge ordered phase in  $La_{1.775}Sr_{0.225}NiO_4$* , Yu.G. Pashkevich, V.A. Blinkin, V.P. Gnezdilov, V.V. Tsapenko, V.V. Eremenko, P. Lemmens, M. Fischer, G. Güntherodt, L. Degiorgi, P. Wachter, J.M. Tranquada, D.J. Buttrey, Physica B **284-288**, 1473-1474 (2000).

58) *Multiple Singlet and Triplet States in the 2D Orthogonal-Dimer Compound  $SrCu_2(BO_3)_2$* , P. Lemmens, M. Grove, M. Fischer, M. Grove, H. Kageyama, K. Onizuka, Y. Ueda, Physica B **281-282**, 656-658 (2000).

57) *Magnetoelastic coupling and spin excitations in the spin-gap system  $(VO)_2P_2O_7$ : A Raman scattering study*, M. Grove, P. Lemmens, G. Güntherodt, B.C. Sales, F. Büllsfeld, W. Assmus, Phys. Rev. B **61**, 6126-6132 (2000).

56) *Stripe Conductivity in  $La_{1.775}Sr_{0.225}NiO_4$* , Yu. Pashkevich, V.A. Blinkin, V.P. Gnezdilov, V.V. Tsapenko, V.V. Eremenko, P. Lemmens, M. Fischer, M. Grove, G. Güntherodt, L. Degiorgi, P. Wachter, J.M. Tranquada, D.J. Buttrey, Phys. Rev. Lett. **84**, 3919 (2000).

55) *Collective Singlet Excitations and Evolution of Raman Spectral Weights in the 2D Spin Dimer Compound  $SrCu_2(BO_3)_2$* , P. Lemmens, M. Grove, M. Fischer, G. Güntherodt, V.N. Kotov, H. Kageyama, K. Onizuka, Y. Ueda, Phys. Rev. Lett. **85**, 2605 (2000).

54) *Local Distortions in  $Ba_{1-x}K_xBiO_3$  observed in low-frequency Phonon Raman scattering*, Yu.G. Pashkevich, V.P. Gnezdilov, V.V. Eremenko, P. Lemmens, G. Güntherodt, W. Reichardt, M. Braden, S.V. Shiryayev, S.N. Barilo, A.G. Soldatov, Int. J. Modern Physics B **14**, 3637-3642 (2000).

## 1999

53) **[Review]** *Quantum Spin Systems: From Spin Gaps to Pseudo Gaps*, P. Lemmens, M. Fischer, M. Grove, P.H.M. v. Loosdrecht, G. Els, E. Sherman, C. Pinettes, G. Güntherodt, in Advances in Physics, Band **39**, Ed. B. Kramer, pp. 281-290, Vieweg Verlag, Braunschweig (1999).

52) *Magnetic Bound States in Dimerized Quantum Spin Systems*, P. Lemmens, M. Fischer, M. Grove, G. Els, G. Güntherodt, M. Weiden, C. Geibel, F. Steglich, Physica B **259-261**, 1050-52 (1999).

51) *Spin gap behavior and charge ordering in  $\alpha'$ - $NaV_2O_5$  probed by light scattering*, M. Fischer, P. Lemmens, G. Els, G. Güntherodt, E. Sherman, E. Morre, C. Geibel, F. Steglich, Phys. Rev. B **60**, 7284-7294 (1999).

50) *Electron-phonon and spin-phonon coupling in  $\alpha'$ - $NaV_2O_5$ : charge fluctuation effects*, E. Sherman, M. Fischer, P. Lemmens, P.H.M. van Loosdrecht, G. Güntherodt, Europhys. Letters **46**, 648-654 (1999).

## 1998

49) *Electronic Raman scattering in  $Tl_2Ba_2CuO_{6+\delta}$ ; oxygen doping effects*, L.V. Gasparov, P. Lemmens, N.N. Kolesnikov, G. Güntherodt, *Physica B* **244**, 54-59 (1998).

48) *Raman scattering on the Spin-Peierls compound  $\alpha'$ - $NaV_2O_5$* , M. Fischer, P. Lemmens, G. Güntherodt, M. Weiden, R. Hauptmann, C. Geibel, F. Steglich, *Physica B* **244**, 76-80 (1998).

47) *Magnetic and Crystallographic Investigation of the inorganic spin-Peierls system  $\alpha'$ - $NaV_2O_5$* , M. Weiden, R. Hauptmann, C. Geibel, M. Köppen, J. Müller, M. Lang, F. Steglich, N. Weiden, M. Fischer, P. Lemmens, G. Güntherodt, *Journ. Magn. Mag. Mat.* **177-181**, 743-745 (1998).

46) *Revival of the spin-Peierls transition in  $(Cu_{1-x}Zn_x)GeO_3$  under pressure*, M. Fischer, P.H.M. van Loosdrecht, P. Lemmens, G. Güntherodt, B. Büchner, T. Lorenz, M. Breuer, J. Zeman, G. Martinez, G. Dhalenne, A. Revcolevschi, *Phys. Rev. B* **57**, 7749-54 (1998).

45) *Electronic Raman scattering in  $Tl_2Ba_2CuO_{6+\delta}$ ; symmetry of the order parameter, oxygen doping effects, normal state scattering*, L.V. Gasparov, P. Lemmens, N.N. Kolesnikov, G. Güntherodt, *Phys. Rev. B* **58**, 11735-60 (1998).

44) *Determination of the superconducting energy gap of  $Rb_3C_{60}$  by electronic Raman scattering*, G. Els, P. Lemmens, P.H.M. van Loosdrecht, G. Güntherodt, H.P. Lang, V. Thommen Geiser, H.-J. Güntherodt, *Physica C* **307**, 79-86 (1998).

43) *Magnetic bound states in the quarter-filled ladder system  $\alpha'$ - $NaV_2O_5$* , P. Lemmens, M. Fischer, G. Els, G. Güntherodt, A.S. Mishchenko, M. Weiden, R. Hauptmann, C. Geibel, F. Steglich, *Phys. Rev. B* **58**, 14159-62 (1998).

42) *Dopant-Bound Spinons in  $Cu_{1-x}Zn_xGeO_3$* , G. Els, G.S. Uhrig, P. Lemmens, H. Vonberg, P.H.M. v. Loosdrecht, G. Güntherodt, O. Fujita, J. Akimitsu, G. Dhalenne, A. Revcolevschi, *Europhys. Lett.* **43**, 463-468 (1998).

## 1997

41) *Electronic Raman scattering in the single- $CuO_2$  layered superconductor  $Tl_2Ba_2CuO_{6+\delta}$* , L.V. Gasparov, P. Lemmens, M. Brinkmann, N.N. Kolesnikov, G. Güntherodt, *Phys. Rev. B* **55**, 2, 1223-30 (1997).

40) *The  $J_1 - J_2$  model revisited: Phenomenology of  $CuGeO_3$* , V.N. Muthukumar, C. Gros, R. Valenti, M. Weiden, C. Geibel, F. Steglich, P. Lemmens, B. Eisener, G. Güntherodt, *Phys. Rev. B* **55**, 5944-52 (1997).

39) *Magnon-magnon interaction in the Spin-Peierls compound  $CuGeO_3$* , C. Gros, W. Wenzel, A. Fledderjohann, P. Lemmens, M. Fischer, G. Güntherodt, M. Weiden, C. Geibel, F. Steglich, *Phys. Rev. B* **55**, 15048-52 (1997).

38) *Magnetic phase diagram of  $Cu(Ge,Si)O_3$* , M. Weiden, R. Hauptmann, C. Geibel, F. Steglich, M. Fischer, P. Lemmens, G. Güntherodt, *Phys. Rev. B* **55**, 15067-75 (1997).

37) *Effects of in-chain and off-chain substitutions on spin fluctuations in the spin-Peierls compound  $CuGeO_3$* , P. Lemmens, M. Fischer, G. Güntherodt, V.N. Muthukumar, C. Gros, P.G.J. van Dongen, M. Weiden, W. Richter, C. Geibel, F. Steglich, *Phys. Rev. B* **55**, 15076-83 (1997).

36) *Experimental Evidence for a Spin-Peierls Transition in  $\alpha'$ - $NaV_2O_5$* , M. Weiden, R. Hauptmann, C. Geibel, F. Steglich, M. Fischer, P. Lemmens, G. Güntherodt, *Zeit. Phys. B*

**103**, 1-3 (1997).

35) *Observation of a three-magnon light scattering process in CuGeO<sub>3</sub>*, G. Els, P.H.M. v. Loosdrecht, P. Lemmens, H. Vonberg, G. Güntherodt, G.S. Uhrig, O. Fujita, J. Akimitsu, G. Dhalenne, A. Revcolevschi, Phys. Rev. Lett. **79**, 5138-41 (1997).

34) *Substitution Effects on spin fluctuations in the spin-Peierls compound CuGeO<sub>3</sub>*, M. Fischer, P. Lemmens, G. Güntherodt, M. Weiden, W. Richter, C. Geibel, F. Steglich, Physica B **230-232**, 984-987 (1997).

#### **1996**

33) *Electronic Raman Scattering of TI-2201 and TI-2223 and the Symmetry of the Energy Gap*, L.V. Gasparov, M. Brinkmann, P. Lemmens, A. Hoffmann, N.N. Kolesnikov, H. Thomas, K. Winzer, G. Güntherodt, Physica B **223-224**, 484-489 (1996).

32) *Substitution Study on the spin-Peierls compound CuGeO<sub>3</sub> using Raman scattering*, P. Lemmens, M. Udagawa, M. Fischer, G. Güntherodt, M. Weiden, W. Richter, C. Geibel, F. Steglich, Czechoslovak Journal of Physics, Vol. **46** (1996), Suppl. S4, p.1979-80.

31) *Electronic Raman scattering on optimally doped TI-2201*, L.V. Gasparov, P. Lemmens, M. Brinkmann, N.N. Kolesnikov, G. Güntherodt, Czechoslovak Journal of Physics, Vol. **46** (1996), Suppl. S2, p. 1103-4.

30) *Raman scattering Study of Phonon and Magnetic Excitations along the Magnetic Chain in CuGeO<sub>3</sub>*, N. Ogita, T. Minami, Y. Tanimoto, O. Fujita, J. Akimitsu, P. Lemmens, G. Güntherodt, M. Udagawa, Journ. Phys. Soc. Jap. **65**, 12, 3754-57 (1996).

29) *Dimensional crossover in the pinning of heavy-ion irradiated Bi-2212 films*, H. Frank, J. Lethen, L. Buschmann, B. Decker, J. Wiesner, G. Wirth, P. Wagner, H. Adrian, P. Lemmens, G. Güntherodt, Physica **C 259**, 142-150 (1996).

28) *Investigation of the Spin-Peierls Transition by Raman Scattering*, P. Lemmens, B. Eisener, M. Brinkmann, L.V. Gasparov, G. Güntherodt, P.v. Dongen, M. Weiden, W. Richter, C. Geibel, F. Steglich, Physica B **223-224**, 535-537 (1996).

27) *Doping Effects in CuGeO<sub>3</sub>*, M. Weiden, W. Richter, C. Geibel, F. Steglich, P. Lemmens, B. Eisener, M. Brinkmann, G. Güntherodt, Physica B **225**, 177-190 (1996).

26) *Frustration induced Raman scattering in CuGeO<sub>3</sub>*, V.N. Muthukumar, C. Gros, W. Wenzel, R. Valenti, P. Lemmens, B. Eisener, M. Weiden, C. Geibel, F. Steglich, Phys. Rev. B **54**, 9635-38 (1996).

#### **1995**

25) *Raman Scattering of the Extra Vibrational Modes in the Mixed Valence Compounds SmB<sub>6</sub> and Sm(Y)S*, P. Lemmens, A. Hoffmann, A. S. Mishchenko, M. Yu. Talantov, G. Güntherodt, Physica B **206-207**, 371-373 (1995).

24) *The Pairing Mechanism in HTSC investigated by Electronic Raman Scattering*, A. Hoffmann, P. Lemmens, L. Winkler, G. Güntherodt, Journal of Low T. Physics, Vol. **99**, Nos. 3/4, 201-203 (1995).

23) *Symmetry of the superconducting order parameter in High Temperature Superconductors investigated by electronic Raman scattering*, P. Lemmens, Proceedings of "The International summer school on High temperatures superconductivity, ISSHTS", Eger, Hungary, Eds.

J. Bankuti, I. Vajda, A. Szalay, Vol. 2, p. 16, ISBN 963-420-467-8 (1995).

#### 1993-1994

22) *The Dependence of the Magnetoacoustic Properties of  $La_{2-x}Sr_xCuO_4$  on Doping*, P. Lemmens, T. Suzuki, M. Nohara, T. Fujita, I. Tanaka, H. Kojima, Physica B **194-196**, 1863-1864 (1994).

21) *Pinning and irreversibility behavior in Au-irradiated Bi-2212 films*, H. Frank, P. Lemmens, J. Wiesner, G. Wirth, P. Wagner, G. Güntherodt, Physica C **235-240**, 2739-2740 (1994).

20) *Electronic Raman scattering of Tl-2223 and the symmetry of the superconducting gap*, A. Hoffmann, P. Lemmens, G. Güntherodt, H. Thomas, K. Winzer, Physica C **235-240**, 1897-1898 (1994).

19) *Specific Heat Measurements across the Metal-Insulator Transition in  $Bi_2Sr_2(Ca_zRE_{1-z})Cu_2O_8$  with  $RE=Y, Pr, Nd$  and  $Gd$* , P. Lemmens, T. Suzuki, H. Goshima, T. Fujita, B. Beschoten, C. Quitmann, Physica B **194-196**, 467-468 (1994).

18) *Determination of the Superconducting Gap of  $Rb_3C_{60}$  by Raman Scattering*, G. Els, P. Lemmens, G. Güntherodt, H.P. Lang, V. Thommen-Geiser, H. J. Güntherodt, Physica C **235-240**, 2475-2476 (1994).

17) *Investigation of the Out-of-Plane Electrical Transport in  $Bi_2Sr_2Ca_1Cu_2O_{8+\delta}$  (BSCCO) and  $TmBa_2Cu_3O_{7-\delta}$  (TBCO) Single Crystals*, L. Winkeler, P. Lemmens, A. Hoffmann, G. Güntherodt, V. I. Voronkova, V.K. Yanovski, in: Applied Superconductivity, Ed. H.C. Freyhardt, Vol. 1, DGM Verlag, Oberursel, p. 125-128, (1993).

16) *Pinning in High-Field Superconductors: A Comparison using Magnetoacoustic Experiments*, P. Lemmens, S. Ewert, J. Pankert, A. Comberg, T. Suzuki, T. Fujita, in: Advances in Superconductivity V, Eds. Y. Bando and H. Yamauchi, Springer Verlag, p. 471-474 (1993), Tokyo.

#### 1990-1992

15) *Magneto hydrodynamic Effects in High Field Superconductors*, P. Lemmens, S. Ewert, J. Pankert, in „High Temperature Superconductivity and Localisation Phenomena“, Eds. A.A. Aronov, A.I. Larkin and V.S. Lutovinov, World Scientific Publ., ISBN 981-02-1004-3, p. 439-48 (1992), Singapore.

14) *Bulk Modulus and Poisson Ratio of  $YBa_2Cu_3O_{7-\delta}$  and  $(Y_{1-x}Pr_x)Ba_2Cu_3O_7$* , P. Lemmens, Ch. Huennekes, S. Ewert, A. Comberg, H. Passing, in: High-Temperature Superconductors, Materials Aspects, ed. H.C. Freyhardt, R. Flükiger, M. Peuckert, DGM Metallurgy Information, (1991) Oberursel.

13) *Nonlinear Coupling of Sound Waves to the Flux Line Lattice*, P. Lemmens, S. Ewert, J. Pankert, Physica C **185**, 2271-2272 (1991).

12) *Ultrasonic Attenuation by the Vortex Lattice of  $Bi_{1.6}Pb_{0.4}Sr_2Ca_2Cu_3O_x$* , P. Lemmens, P. Fröning, S. Ewert, J. Pankert, G. Marbach, A. Comberg, Physica C **174**, 289-302 (1991).

11) *Magnetoacoustic Determination of Pinning Energies in High  $T_c$  Superconductors*, J. Pankert, G. Marbach, H. Passing, A. Comberg, P. Lemmens, P. Fröning, S. Ewert, Physica C **182**, 291-296 (1991).

10) *Elastic Properties of  $YBa_2Cu_3O_x$  and  $(Y_{1-x}Pr_x)Ba_2Cu_3O_7$  Studied by Ultrasound*,

P. Lemmens, Ch. Huennekes, P. Froening, S. Ewert, H. Passing, G. Marbach, A. Comberg, *Journal of Less Comm. Met.*, **164-165**, 1129-35 (1990).

9) *Ultrasonic Attenuation by the Vortex Lattice of High  $T_c$  Superconductors*, J. Pankert, G. Marbach, A. Comberg, P. Lemmens, P. Froening, S. Ewert, *Phys. Rev. Lett.* **65**, 3052-3055 (1990).

8) *Ultrasonic Attenuation in High  $T_c$  Superconductors: A new Approach to the Problem of Flux Pinning*, P. Lemmens, Ph. Froening, S. Ewert, J. Pankert, H. Passing, A. Comberg, *Physica B* **165-166**, 1275-6 (1990).

### **1987-1989**

7) *Anomalous Poisson Ratio and Bulk Modulus in High  $T_c$  Superconductors*, P. Lemmens, Ch. Huennekes, M. Brakmann, S. Ewert, A. Comberg, H. Passing, *Physica C* **162-164**, 452-453 (1989).

6) *Acoustic Measurements on High  $T_c$  Superconductors in the Systems  $YBa_2Cu_3O_{7-\delta}$  and  $(Bi,Pb)_2Sr_2Ca_2Cu_3O_{10}$* , P. Lemmens, F. Stellmach, J. Wynands, S. Ewert, A. Comberg, H. Passing, G. Marbach, *Journal of Less Comm. Met.* **151**, 153-158 (1989).

5) *Elastic Constants and Quadrupolar Interaction in the  $(La,Ce)B_6$  Series*, P. Lemmens, S. Ewert, P. Thalmeier, D. Lenz, K. Winzer, *Z. Phys. B* **76**, 501-506 (1989).

4) *Ultrasonic Study of  $YBa_2Cu_3O_{7-\delta}$  Samples of Different Microstructure*, P. Lemmens, F. Stellmach, S. Ewert, S. Guo, J. Wynands, G. Arlt, A. Comberg, H. Passing, G. Marbach, *Physica C* **153-155**, 294-295 (1988).

3) *Effect of Kondo Resonance Scattering on Magnetoacoustic Quantum Oscillations*, P. Thalmeier, P. Lemmens, S. Ewert, D. Lenz, K. Winzer, *Europhys. Lett.*, **4** (10), 1177-81 (1987).

2) *Temperature and Magnetic Field Dependence of Elastic Constants in  $(La,Ce)B_6$  Single Crystals*, S. Ewert, S. Guo, P. Lemmens, D. Lenz, W. Sander, P. Thalmeier, K. Winzer, *Jap. J. Appl. Phys. Vol* **26**, 537-538 (1987).

1) *Ultrasonic investigations on superconducting  $YBa_2Cu_3O_{7-\delta}$  Samples of different Microstructure*, S. Ewert, S. Guo, P. Lemmens, F. Stellmach, J. Wynands, G. Arlt, D. Bonnenberg, H. Klim, A. Comberg, H. Passing, *Solid State Commun.* **64**, 1153-56 (1987).

### **Thesis work / Diplom-, Promotions- und Habilitationsarbeit**

1) *Temperatur- und Magnetfeldabhängigkeit der elastischen Konstanten von  $(La,Ce)B_6$* , Diploma Thesis (1988).

2) *Magnetoakustische Effekte in Hochtemperatur-Supraleitern*, Dissertation/Thesis (1992).

3) *Magnetic Light Scattering in Low-Dimensional Quantum Spin Systems*, Habilitation, (2000).