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Ansættelse

Adjunkt

Mads Clausen Institutet
Syddansk Universitet
Odense M
1. nov. 2018 → 31. okt. 2022

Adjunkt

SDU NanoSYD
Syddansk Universitet
Sønderborg
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Adjunkt

Danish Institute for Advanced Study
Syddansk Universitet
Odense, Danmark
1. nov. 2018 → present

Publikationer

Long-Range Ordered Amorphous Atomic Chains as Building Blocks of a Superconducting Quasi-One-Dimensional Crystal
An, C., Zhou, Y., Chen, C., Fei, F., Song, F., Park, C., Zhou, J., Rubahn, H-G., Moshchalkov, V. V., Chen, X., Zhang, G. & Yang, Z., 24. sep. 2020, I: *Advanced Materials*. 32, 38, 8 s., 2002352.

Yu-Shiba-Rusinov bands in ferromagnetic superconducting diamond

Zhang, G., Samuely, T., Iwahara, N., Kačmarčík, J., Wang, C., May, P. W., Jochum, J. K., Onufrienko, O., Szabó, P., Zhou, S., Samuely, P., Moshchalkov, V. V., Chibotaru, L. & Rubahn, H-G., 15. maj 2020, I: *Science Advances*. 6, 20, s. eaaz2536 6 s., eaaz2536.

Hybrids of PtRu Nanoclusters and Black Phosphorus Nanosheets for Highly Efficient Alkaline Hydrogen Evolution Reaction

Li, Y., Pei, W., He, J., Liu, K., Qi, W., Gao, X., Zhou, S., Xie, H., Yin, K., Gao, Y., He, J., Zhao, J., Hu, J., Chan, T-S., Li, Z., Zhang, G. & Liu, M., 6. dec. 2019, I: *ACS Catalysis*. 9, s. 10870-10875

Anomalous Anisotropy in Superconducting Nanodiamond Films Induced by Crystallite Geometry

Zhang, G., Kačmarčík, J., Wang, Z., Zulkharnay, R., Marcin, M., Ke, X., Chiriaev, S., Adashkevich, V., Szabó, P., Li, Y., Samuely, P., Moshchalkov, V., May, P. & Rubahn, H-G., dec. 2019, I: *Physical Review Applied*. 12, 6, 8 s., 064042.

Superconductor-insulator transition driven by pressure-tuned intergrain coupling in nanodiamond films

Zhang, G., Zhou, Y., Korneychuk, S., Samuely, T., Liu, L., May, P., Xu, Z., Onufrienko, O., Zhang, X., Verbeeck, J., Samuely, P., Moshchalkov, V., Yang, Z. & Rubahn, H-G., 5. mar. 2019, I: *Physical Review Materials*. 3, 3, 9 s., 034801.

Tunable optical absorption of dimer nanostructure array achieved by angular evaporation

Yao, X., Shi, Z., Li, C., Kong, Z., Zhang, G., Zhang, J. & Zhang, X., sep. 2018, I: Journal of Micromechanics and Microengineering. 28, 11, 6 s., 115010.

Bosonic Confinement and Coherence in Disordered Nanodiamond Arrays

Zhang, G., Samuely, T., Du, H., Xu, Z., Liu, L., Onufriienko, O., May, P. W., Vanacken, J., Szabó, P., Kačmarčík, J., Yuan, H., Samuely, P., Dunin-Borkowski, R. E., Hofkens, J. & Moshchalkov, V. V., 28. nov. 2017, I: ACS Nano. 11, 11, s. 11746-11754 9 s.

Superconducting Ferromagnetic Nanodiamond

Zhang, G., Samuely, T., Xu, Z., Jochum, J. K., Volodin, A., Zhou, S., May, P. W., Onufriienko, O., Kačmarčík, J., Steele, J. A., Li, J., Vanacken, J., Vacík, J., Szabó, P., Yuan, H., Roeffaers, M. B. J., Cerbu, D., Samuely, P., Hofkens, J. & Moshchalkov, V. V., 27. jun. 2017, I: ACS Nano. 11, 6, s. 5358-5366 9 s.

Superconducting density of states in B-doped diamond

Onufriienko, O., Samuely, T., Zhang, G., Vanacken, J., Xu, Z., May, P. W., Szabó, P., Moshchalkov, V. V. & Samuely, P., 1. apr. 2017, I: Acta Physica Polonica A. 131, 4, s. 1033-1035 3 s.

Bosonic Anomalies in Boron-Doped Polycrystalline Diamond

Zhang, G., Samuely, T., Kačmarčík, J., Ekimov, E. A., Li, J., Vanacken, J., Szabó, P., Huang, J., Pereira, P. J., Cerbu, D. & Moshchalkov, V. V., 21. dec. 2016, I: Physical Review Applied. 6, 6, 064011.

Study of the superconducting properties of the new intermetallic compound $Zr_{1-x}Nb_xB_2$

Marques, M. D. R., Portela, F. S., Corredor, L. T., Zhang, G., Vanacken, J., Moshchalkov, V. V., Correa, L. E., Renosto, S. T., Cigarroa, O., MacHado, A. J. S. & Aguiar, J. A., 21. jul. 2016, I: Superconductor Science and Technology. 29, 9, 095007.

Thermal and quantum depletion of superconductivity in narrow junctions created by controlled electromigration

Baumans, X. D. A., Cerbu, D., Adami, O. A., Zharinov, V. S., Verellen, N., Papari, G., Scheerder, J. E., Zhang, G., Moshchalkov, V. V., Silhanek, A. V. & Van De Vondel, J., 16. feb. 2016, I: Nature Communications. 7, 10560.

Local destruction of superconductivity by non-magnetic impurities in mesoscopic iron-based superconductors

Li, J., Ji, M., Schwarz, T., Ke, X., Van Tendeloo, G., Yuan, J., Pereira, P. J., Huang, Y., Zhang, G., Feng, H. L., Yuan, Y. H., Hatano, T., Kleiner, R., Koelle, D., Chibotaru, L. F., Yamaura, K., Wang, H. B., Wu, P. H., Takayama-Muromachi, E., Vanacken, J. & Moshchalkov, V. V., 3. jul. 2015, I: Nature Communications. 6, 7614.

High upper critical fields of superconducting $Ca_{10}(Pt_4As_8)(Fe_{1.8}Pt_{0.2}As_2)_5$ whiskers

Li, J., Zhang, G., Hu, W., Huang, Y., Ji, M., Sun, H. C., Zhou, X. J., An, D. Y., Hao, L. Y., Zhu, Q., Yuan, J., Jin, K., Guo, H. X., Fujita, D., Hatano, T., Yamaura, K., Takayama-Muromachi, E., Wang, H. B., Wu, P. H., Vanacken, J. & Moshchalkov, V. V., 29. jun. 2015, I: Applied Physics Letters. 106, 26, 262601.

Superconducting properties of Nb/Pb/Nb trilayer

Portela, F. S., Corredor, L. T., Barrozo, P., Jung, S. G., Zhang, G., Vanacken, J., Moshchalkov, V. V. & Albino Aguiar, J., 1. mar. 2015, I: Superconductor Science and Technology. 28, 3, 034001.

Impurity effects on the normal-state transport properties of $Ba_{0.5}K_{0.5}Fe_2As_2$ superconductors

Li, J., Yuan, J., Ji, M., Zhang, G., Ge, J. Y., Feng, H. L., Yuan, Y. H., Hatano, T., Hu, W., Jin, K., Schwarz, T., Kleiner, R., Koelle, D., Yamaura, K., Wang, H. B., Wu, P. H., Takayama-Muromachi, E., Vanacken, J. & Moshchalkov, V. V., 14. jul. 2014, I: Physical Review B. 90, 2, 024512.

Global and local superconductivity in boron-doped granular diamond

Zhang, G., Turner, S., Ekimov, E. A., Vanacken, J., Timmermans, M., Samuely, T., Sidorov, V. A., Stishov, S. M., Lu, Y., Deloof, B., Goderis, B., Van Tendeloo, G., Van De Vondel, J. & Moshchalkov, V. V., 2. apr. 2014, I: Advanced Materials. 26, 13, s. 2034-2040 7 s.

Effect of short-range ferromagnetic ordering on the electrical transport properties of $(\text{La}_{0.9}\text{Bi}_{0.1})_{2/3}\text{Ca}_{1/3}\text{MnO}_3$ in the magnetic field up to 40 T

Wu, Y., Xia, Z., Zhang, G. & Vanacken, J., 1. feb. 2014, I: Journal of Low Temperature Physics. 174, 3-4, s. 207-213 7 s.

Metal-bosonic insulator-superconductor transition in boron-doped granular diamond

Zhang, G., Zeleznik, M., Vanacken, J., May, P. W. & Moshchalkov, V. V., 11. feb. 2013, I: Physical Review Letters. 110, 7, 077001.

Superconductivity in ZrB12 and LuB12 with various boron isotopes

Sluchanko, N., Gavrilkin, S., Mitsen, K., Kuznetsov, A., Sannikov, I., Glushkov, V., Demishev, S., Azarevich, A., Bogach, A., Lyashenko, A., Dukhnenko, A., Filipov, V., Gabani, S., Flachbart, K., Vanacken, J., Zhang, G. & Moshchalkov, V., 1. jan. 2013, I: Journal of Superconductivity and Novel Magnetism. 26, 5, s. 1663-1667 5 s.

Weak ferromagnetism in La-doped BiFeO_3 multiferroic thin films

Lazenka, V. V., Ravinski, A. F., Makoed, I. I., Vanacken, J., Zhang, G. & Moshchalkov, V. V., 15. jun. 2012, I: Journal of Applied Physics. 111, 12, 123916.

Structural transformation and magnetoelectric behaviour in $\text{Bi}_{1-x}\text{Gd}_x\text{FeO}_3$ multiferroics

Lazenka, V. V., Zhang, G., Vanacken, J., Makoed, I. I., Ravinski, A. F. & Moshchalkov, V. V., 28. mar. 2012, I: Journal of Physics D: Applied Physics. 45, 12, 125002.

Role of grain size in superconducting boron-doped nanocrystalline diamond thin films grown by CVD

Zhang, G., Janssens, S. D., Vanacken, J., Timmermans, M., Vacík, J., Ataklti, G. W., Decelle, W., Gillijns, W., Goderis, B., Haenen, K., Wagner, P. & Moshchalkov, V. V., 12. dec. 2011, I: Physical Review B. 84, 21, 10 s., 214517.

Joule heating induced nonlinear behavior in the phase-separated system $(\text{La}_{0.73}\text{Bi}_{0.27})_{0.67}\text{Ca}_{0.33}\text{MnO}_3$

Wu, Y., Li, H., Xia, Z., Zhang, G., Vanacken, J. & Moshchalkov, V. V., 1. maj 2011, I: Journal of Low Temperature Physics. 163, 3-4, s. 176-183 8 s.

In/extrinsic granularity in superconducting boron-doped diamond

Willems, B. L., Zhang, G., Vanacken, J., Moshchalkov, V. V., Guillamon, I., Suderow, H., Vieira, S., Janssens, S. D., Haenen, K. & Wagner, P., 1. okt. 2010, I: Physica C: Superconductivity and its Applications. 470, 19, s. 853-856 4 s.

Granular superconductivity in metallic and insulating nanocrystalline boron-doped diamond thin films

Willems, B. L., Zhang, G., Vanacken, J., Moshchalkov, V. V., Janssens, S. D., Haenen, K. & Wagner, P., 22. sep. 2010, I: Journal of Physics D: Applied Physics. 43, 37, 374019.

Direct evidence of magnetostructural phase separation in the electron-doped manganite $\text{Ca}_{0.8}\text{Sm}_{0.16}\text{Nd}_{0.04}\text{MnO}_3$ by means of high magnetic field studies

Duc, F., Vanacken, J., Zhang, G., Decelle, W., Lorenzo, J. E., Detlefs, C., Strohm, C., Roth, T., Suryanarayanan, R., Frings, P. & Rikken, G. L. J. A., 10. aug. 2010, I: Physical Review B. 82, 5, 054105.

Disorder tuned superconductor insulator transition in $\text{La}_{2-x}(\text{Sr/Ce})_x\text{CuO}_4$ & NbN superconducting thin films

Vanacken, J., Zhang, G., Wambecq, T., Moshchalkov, V. V., Leridon, B., Jin, K., Zhao, B. R., Zhu, B. Y., Raychaudhuri, P., Chockalingam, S. P., Chand, M. & Jesudasan, J., 1. jul. 2010, I: Journal of Superconductivity and Novel Magnetism. 23, 5, s. 807-810 4 s.

Magnetic field-driven superconductor-insulator transition in boron-doped nanocrystalline chemical vapor deposition diamond

Zhang, G., Vanacken, J., Van De Vondel, J., Decelle, W., Fritzsche, J., Moshchalkov, V. V., Willems, B. L., Janssens, S. D., Haenen, K. & Wagner, P., 1. jul. 2010, I: Journal of Applied Physics. 108, 1, 013904.

Negative magnetoresistance in boron-doped nanocrystalline diamond films

Willems, B. L., Zhang, G., Vanacken, J., Moshchalkov, V. V., Janssens, S. D., Williams, O. A., Haenen, K. & Wagner, P., 28. aug. 2009, I: Journal of Applied Physics. 106, 3, 033711.

Memory effect of magnetic nanoparticle systems originating from particle size distribution

Zhang, G., Potzger, K., Zhou, S., Mücklich, A., Ma, Y. & Fassbender, J., 1. maj 2009, I: Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms. 267, 8-9, s. 1596-1599 4 s.

Microwave transmission modes in compound metallic gratings

Ma, Y. G., Rao, X. S., Zhang, G. F. & Ong, C. K., 10. aug. 2007, I: Physical Review B. 76, 8, 085413.

Structural and magnetic properties of Mn-implanted Si

Zhou, S., Potzger, K., Zhang, G., Mücklich, A., Eichhorn, F., Schell, N., Grötzschel, R., Schmidt, B., Skorupa, W., Helm, M., Fassbender, J. & Geiger, D., 7. feb. 2007, I: Physical Review B. 75, 8, 085203.

Crystalline Ni nanoparticles as the origin of ferromagnetism in Ni implanted ZnO crystals

Zhou, S., Potzger, K., Zhang, G., Eichhorn, F., Skorupa, W., Helm, M. & Fassbender, J., 1. dec. 2006, I: Journal of Applied Physics. 100, 11, 114304.

Awards & honours

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|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2018 | Appointed D-IAS Assistant Professor |
| 2018 | Appointed a committee member for the International Journal of Nano Scientific Networks and Nanotechnology by the Helics Group in its program of 'Nano-2018 Leadership' |
| 2017 | Awarded "Seal of Excellence" for the Marie Skłodowska-Curie Actions (MSCA IF) proposal "Quantum Multi-Critical Points in a New Class of Ferromagnets" |
| 2015 | The Journal Superconductor Science and Technology selected my paper "Super-conducting Properties of Nb/Pb/Nb Trilayer" for the 'highlights of 2015' collection |
| 2014 | Appointed FWO (Flemish Research Foundation) Postdoc Researcher |
| 2010 | Third prize in the poster competition (sponsored by the European Science Foundation) of NES-ESF Workshop on Nanoscale Superconductivity, Fluxonics and Plasmonics |

Invited lectures

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| 2019 | Department of Physics, Technical University of Denmark, Denmark, May 8 |
| 2019 | Quantum Phenomena Group, Heinz Maier-Leibnitz Zentrum, Germany, Mar 14 |
| 2018 | Institut Neel, CNRS, France, Feb 8 |
| 2017 | Nuclear Physics Institute, Czech Academy of Sciences, Czech Republic, Oct 24 |
| 2016 | Laboratoire de Physique de la Matière Complexe, EPFL, Switzerland, Nov 10 |
| 2016 | Max Planck Institute for Chemical Physics of Solids, Germany, Jul 5 |
| 2015 | Department of Electrical Engineering, University of Glasgow, UK, Dec 10 |
| 2015 | School of Engineering and Applied Science, Yale University, US, May 12 |

Educational practice - basis / values

The following five factors are at the heart of my values of teaching:

Development of students' sense of responsibility. It seems to me that nowadays teachers need to clarify the fact that it is students' responsibility to learn. We need to help the students understand that without fulfilling this responsibility, they would not be able to manage their work, family and social responsibilities in the future.

Teaching with respect to the diversity. When teaching, the diversity of the students such as the cultural and educational backgrounds should be respected and taken into account, and the teaching methodology needs to be adjusted.

Learning while teaching. When teaching, I should be learning as well, i.e. learning the students' response, learning their confusions, learning their worries and learning their way of understanding and thinking, and then keep developing my teaching methodology with respect to their needs.

Development of students' method and habit of learning. As the saying goes, it would be better to teach someone how to fish than just to give him/her a fish. Transfer of knowledge is not the final goal of teaching, while, instead, motivating the students to come up with questions and encouraging them to solve the questions, and then making this learning process a habit of theirs is far more important. In this way, no matter which career path they will take in the future, they can stay competitive by self-learning.

Evaluation and self-reflection. Students should study/work hard to earn their credits/diploma, while I should care more about the students' learning process rather than evaluating their performance only based on the results. When students make mistakes, chances should be provided for them to correct the mistakes, i.e. learning from the failure. Meanwhile, I need to adjust my teaching methodology based on self-reflection.

Teaching experience and supervision of students

2019-	B.Sc. course: Statics, Materials and Mathematics (MECH1-A), University of Southern Denmark, Denmark
2015-2016	Postdoc Junwei Huang, KU Leuven, Belgium
2015	Visiting PhD student Xavier Baumans, University of Liege, Belgium
2014	Visiting PhD student Nahuel Statuto, Universitat de Barcelona, Spain
2013-2014	Visiting PhD student Flavia Portela, Universidade Federal de Pernambuco, Brazil
2013	Visiting postdoc Alexander Kuznetsov, Prokhorov General Physics Institute of Russian Academy of Sciences, Russia
2010-2011	M.Sc. student Matias Timmermans, KU Leuven, Belgium, thesis defended in 2011
2009-2010	Visiting PhD student Yuying Wu, Huazhong University of Science and Technology, China

Other activities related to teaching and teaching development

Feb 2019	Censor for the examination of the course of SENS
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