



ACADEMIC TEACHER PROFESSIONAL EXPERIENCE

DOCTORAL SCHOOL OF WROCLAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

1. Basic information

Name, surname:	Jacek Herbrych
Grade / Title:	dr. hab.
Scientific discipline	nauki fizyczne/ physical sciences
Faculty:	W11 Wydział Podstawowych Problemów Techniki / Faculty of Fundamental Problems of Technology
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2. Publication record

Up to 10 most important papers published over the period of previous 10 years.

No.	Description (authors, publication title, journal / conference, DOI)	Publication year
1.	J. Herbrych, M. Środa, G. Alvarez, M. Mierzejewski, and E. Dagotto, „Interaction-induced topological phase transition and Majorana edge states in low-dimensional orbital-selective Mott insulators”, Nat. Commun. 12, 2955 (2021), 10.1038/s41467-021-23261-2	2021
2.	J. Herbrych, N. Kaushal, A. Nocera, G. Alvarez, A. Moreo, and E. Dagotto, "Spin dynamics of the block orbital-selective Mott phase", Nat. Commun. 9, 3736 (2018), 10.1038/s41467-018-06181-6	2018
3.	J. Herbrych, J. Heverhagen, G. Alvarez, M. Daghofer, A. Moreo, and E. Dagotto, "Block-spiral magnetism: An exotic type of frustrated order", Proc. Natl. Acad. Sci. USA 117, 16226 (2020), 10.1073/pnas.2001141117	2020
4.	J. Herbrych, J. Heverhagen, N. D. Patel, G. Alvarez, M. Daghofer, A. Moreo, and E. Dagotto, "Novel magnetic block states in low-dimensional iron-based superconductors", Phys. Rev. Lett. 123, 027203 (2019), 10.1103/PhysRevLett.123.027203	2019
5.	S. Scherg, T. Kohlert, J. Herbrych, J. Stolpp, P. Bordia, U. Schneider, F. Heidrich-Meisner, I. Bloch, and M. Aidesburger, "Non-equilibrium mass transport in the Fermi-Hubbard model", Phys. Rev. Lett. 123, 027203 (2019), 10.1103/PhysRevLett.123.027203	2019
6.	M. Środa, J. Mravlje, G. Alvarez, E. Dagotto, and J. Herbrych, "Hund bands in spectra of multiorbital systems", Phys. Rev. B 108, L081102 (2023), 10.1103/PhysRevB.108.L081102	2023
7.	M. Środa, E. Dagotto, and J. Herbrych, "Quantum magnetism of iron-based ladders: blocks, spirals, and spin flux", Phys. Rev. B 104, 045128 (2021), 10.1103/PhysRevB.104.045128	2021
8.	J. Herbrych, G. Alvarez, A. Moreo, and E. Dagotto, "Block orbital-selective Mott insulators: a spin excitation analysis", Phys. Rev. B 102, 115134 (2020), 10.1103/PhysRevB.102.115134	2020
9.	M. Mierzejewski, J. Pawłowski, P. Prelovšek, and J. Herbrych, "Multiple relaxation times in perturbed XXZ chain", SciPost Phys. 13, 013 (2022), 10.21468/SciPostPhys.13.2.013	2022



10.	M. Mierzejewski, J. Wronowicz, J. Pawłowski, and J. Herbrych, "Quasiballistic transport in long-range anisotropic Heisenberg model", Phys. Rev. B 107, 045134 (2023), 10.1103/PhysRevB.107.045134	2023
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3. Projects and grants

List of the most important 5 projects/grants with basic description including: title, source(s) of funding, name of the call, role in the project (e.g., principal investigator).

1.	Role in the project (e.g., principal investigator, work package leader, etc.)	Principle investigator
	Project title	Polish Returns
	Sources of funding	Polish National Agency for Academic Exchange (NAWA)
	Name of the call	PPN/PPO/2018/1/00035
	Implementation period	2019-2022
2.	Role in the project (e.g., principal investigator, work package leader, etc.)	Principle investigator
	Project title	OPUS 18 <i>Magnetic properties of strongly correlated multi-orbital systems</i>
	Sources of funding	The National Science Centre (NCN)
	Name of the call	OPUS 18 2019/35/B/ST3/01207
	Implementation period	2020-2023
3.	Role in the project (e.g., principal investigator, work package leader, etc.)	
	Project title	
	Sources of funding	
	Name of the call	
	Implementation period	
4.	Role in the project (e.g., principal investigator, work package leader, etc.)	
	Project title	
	Sources of funding	
	Name of the call	
	Implementation period	
5.	Role in the project (e.g., principal investigator, work package leader, etc.)	
	Project title	
	Sources of funding	
	Name of the call	
	Implementation period	

4. International experience

Brief description of international cooperation and experience (e.g., research stays, cooperation with foreign entities, coordination or participation in international projects or programmes, keynote



speeches and presentations delivered at renowned international conferences, visiting professor stays, invited lectures).

No.	Description	Year(s)
1.	Young researcher under supervision of Prof. Peter Prelovšek, Jožef Stefan Institute, Ljubljana, Slovenia	2010-2013
2.	Postdoctoral fellow with Prof. Xenophon Zotos, University of Crete, Heraklion, Greece	2013-2016
3.	Postdoctoral fellow with Prof. Elbio Dagotto and Prof. Adriana Moreo, University of Tennessee, Knoxville, USA	2016-2019

5. Experience in teaching doctoral students

Brief description of experience in teaching doctoral students (e.g., courses in doctoral schools and PhD studies, summer/winter schools for doctoral students, tutorials, trainings, etc.).

No.	Description	Year(s)
1.	N/A	
2.		
3.		

6. List of supervised doctoral students

List of all supervised doctoral students that defended the PhD including: name of the student, dissertation title, year of awarding PhD.

No.	Name, surname	Dissertation title	Year of awarding PhD
1.	Maksymilian Środa	<i>Electronic and magnetic properties of low-dimensional strongly correlated multiorbital systems</i>	2023
2.			
3.			

7. Prizes and awards

The most important national and international prizes and awards related to research, development and teaching activities.

No.	Description	Year
1.	N/A	
2.		
3.		

8. Other significant achievements

Information on other significant achievements related to research, development and teaching activities.

N/A