

PROGRAM OF THE CONFERENCE

Thursday, November 20, 2025

15:30–16:00 Registration

Session I, chair: Z. Postawa (Dean)

16:00–17:00 Conference opening and official address

17:00–18:00 J. Spałek, *From spins to condensed matter physics and beyond*

18:00–21:00 Welcome reception and poster session

Friday, November 21, 2025

Session II, chair: W. Sadowski

8:30–9:00 K.I. Wysokiński, *Beyond Hubbard: the role of correlated hopping interaction in superconductors and quantum dot devices*

9:00–9:30 D. Kaczorowski, *Competing electronic states in the multiphase heavy-fermion superconductor EuRh_2As_2*

9:30–10:00 A. Ślebarski, *Griffiths phase in disordered strongly correlated electron systems: Experimental evidences*

Session III, chair: Z. Kąkol

10:30–11:00 M. Cieplak, *From ultrathin superconducting films towards Josephson junction arrays*

11:00–11:30 J. Zakrzewski, *Facets of many-body localization*

11:30–12:00 B. Bułka, *Search for Majorana states in proximized double quantum dots*

12:00–12:30 A. Rycerz, *Quantum transport in monolayer graphene away from the charge-neutrality point*

Session IV, chair: K. Wohlfeld

13:30–14:00 K. Byczuk, *Friedel oscillations in correlated electron systems*

14:00–14:30 K. Rogacki, *Increasing the pinning force and critical currents in REBaCuO-type superconductors*

14:30–15:00 M. Mańska, *Pairing symmetries in a Fermi–Hubbard ladder with band flattening*

Session V, chair: J. Herbrych

15:30–15:50 P. Starowicz, *Photoemission insight into the behavior of Ce 4f electrons in heavy fermion superconductors: CeCoIn_5 and $\text{Ce}_3\text{PdIn}_{11}$*

15:50–16:10 M. Wysokiński, *From correlations to topology: A journey through quantum phases*

16:10–16:30 J. Kaczmarczyk, *From academia to AI in biotech: A personal take*

17:15 Trip to AGH concert: “Melodie Nauki — Zdarzyło się w Krakowie”

Saturday, November 22, 2025

Session VI, chair: M. Cieplak

- 8:30–9:00 Z. Kąkol, A. Kozłowski, *Aspects of phase changes visible in the Verwey transition*
- 9:00–9:30 M. Mierzejewski, *Relaxation processes in one-dimensional t - J and t - J_z models*
- 9:30–10:00 T. Domański, *Electron pairing and correlations: insights from nanoscopic systems*

Session VII, chair: R. Radwański

- 10:30–10:50 M. Zegrodnik, *Unconventional superconductivity in moiré transition metal dichalcogenide bilayers*
- 10:50–11:10 W. Brzezicki, *Signatures of multipolar current phases*
- 11:10–11:30 M. Fidrysiak, *Persistent magnetic excitations in high- T_c superconductors: A variational perspective*
- 11:30–11:50 A. Kądziaława, *On miscibility, decomposition, and enhancement of tungsten-chromium composites*

Session VIII, chair: J. Spałek

- 12:10–12:30 B. Wiendlocha, *DFT studies of superconductors: Can T_c be precisely calculated?*
- 12:30–12:50 J. Jędrak, *Statistically consistent mean-field formalism*
- 12:50–13:10 P. Kuterba, *Strongly correlated fermions with superexclusion principle*
- 13:10–13:30 A. Biborski, *Electronic correlations in transition-metal dichalcogenide moiré structures from the perspective of Density Matrix Renormalization Group*

Posters

- T. Dey, *Superconductivity in t - J - U model with Rashba coupling and its topological properties within the statistically consistent Gutzwiller approximation*
- M. Hendzel, *Entanglement entropy and exchange mechanisms in hydrogen bond formation*
- G. Jagło, *The nonlinear and dielectric optical properties of lead-free ceramics $K_{0.5}Bi_{0.5}TiO_3$*
- R. Kurlito, *Electronic Structure of heavy fermion superconductor Ce_3PdIn_{11} studied by DFT and ARPES*
- R. Radwański, *Do we know already “which electrons are strongly correlated” in strongly-correlated electron systems*
- Z. Ropka, *Solid-state crystals as a cheap laboratory for the atomic physics*