



assoc. professor Dr. Karol Flachbart, DSc.
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Current position(s):

Senior Researcher

Profile:

Physicist, studying strongly correlated electronic systems at low temperatures (superconductivity, magnetism of frustrated systems, topological and Kondo insulators).
Coauthor of more than 160 publications with more than 1000 citations.

Experience:

- 1976 – Institute of Experimental Physics, SAS
- study stays at Univ. Bayreuth, Germany; Institute for Physical Problems of RAS, Moscow, Russia; TU Munich, Germany; Helmholtz Center Berlin, Germany
- 2007 - 2015 – director of IEP SAS

Organisation of Scientific Meetings:

- Int. Conf. "Ultra Low Temperatures", 1996 v Stara Lesna, co-chairman
- Int. Conf. "Czech and Slovak conference on magnetism 2013", Košice, Advisory Comm. member
- Int. Conf. "Czech and Slovak conference on magnetism 2016", Košice, Advisory Comm. member

Projects:

- 1998 - 1993 VEGA "4f electrons and properties of RE compounds" – coordinator
- 1999 - 2000 DAAD "Magnets with frustrated symmetry" – coordinator
- 2004 - 2006 EÚ project INTAS "Nature of magnetism in RE borides" – coordinator
- 2006 - 2007 DAAD "Magnetism in boron-rich RE compounds" – coordinator
- 2007 - 2009 VEGA 2/7054/27 "Strongly correlated electronic systems" – coordinator
- 2015 - 2016 APVV SK-UA-2013-0028 "Chalkogenide glasses" – coordinator
- 2016 - 2017 DAAD "Ground state in frustrated tetraborides" – coordinator

Five representative publications:

1. Fractional Magnetization Plateaus and Magnetic Order in the Shastry-Sutherland Magnet TmB₄, By: Siemensmeyer, K.; Wulf, E.; Mikeska, H. -J.; Flachbart, K. et al. PHYS. REV. LETT., Vol. 101, Art. 177201, Publ.: 2008
2. Pressure-induced Fermi-liquid behavior in the Kondo insulator SmB₆: Possible transition through a quantum critical point, By: Gabani, S; Bauer, E; Berger, S; Flachbart, K. et al., PHYS. REV. B, Vol. 67, Art. 172406, Publ.: 2003
3. Energy gap of intermediate-valent SmB₆ studied by point-contact spectroscopy, By: Flachbart, K; Gloos, K; Konovalova, E; et al., PHYS. REV. B, Vol.: 64, Art. N.: 085104, Published: 2001
4. Properties of the in-gap states in SmB₆, By: Gabani, S; Flachbart, K; Konovalova, E; et al. SOLID STATE COMMUN. Vol.: 117, Pages: 641-644 Published: 2001
5. Low temperature properties and superconductivity of LuB₁₂, By: Flachbart, K; Gabani, S; Gloos, K; et al., JOURNAL OF LOW TEMPERATURE PHYSICS Vol.: 140, Pages: 339-353, Published: 2005

Patents: -

Fellowships / Awards / Memberships of Scientific Societies:

American, German and Slovak Physical Societies.