Papers published with students from University of Debrecen

1. M. Hunyadi, Zs. Gulácsi: Exact Partition and Pair-Correlation Functions for an Ising Model with Mirror-Image type Interactions, Phys. Rev. B53, 2326, (1996).

2. P. Gurin, Zs. Gulácsi: Exact phase diagram for extended Hubbard model in $D > 1$ dimensions with next-nearest-neighbor interaction terms, Low Temp. Phys. 21, 2643, (1996).

3. Zs. Szabó, Zs. Gulácsi: Superconducting phases of the extended Hubbard model for doped systems, Low Temp. Phys. 21, 609, (1996).

4. Zs. Gulácsi, M. Hunyadi, I. Daruka: Hidden ordering effects in $D = 1$ dimensional Ising model with Mirror-Image type interactions, Low Temp. Phys. 21, 1911, (1996).

5. P. Gurin, Zs. Gulácsi: Hubbard model with next-nearest-neighbour interaction terms in higher dimensions: new exactly solvable cases, Phil. Mag. B76, 827, (1997).

6. Zs. Szabó, Zs. Gulácsi: Possible d-like symmetry pairing states in the extended Hubbard model, Phil. Mag. B76, 833, (1997).

7. I. Orlik, Zs. Gulácsi: Exact results related to the periodic Anderson model in the strong-coupling $U = \infty$ limit, Phil. Mag. B76, 845, (1997).

8. Zs. Szabó, Zs. Gulácsi: Superconductivity in the extended Hubbard model with more than nearest-neighbour contributions, Phil. Mag. B76, 911-923, (1997).

9. P. Gurin, Zs. Gulácsi, Exact results related to the extended Hubbard model with increased interaction range in $D > 1$ dimensions, Phil. Mag. B78, 315, (1998).

10. I. Orlik, Zs. Gulácsi, Exact results related to the periodic Anderson model in $D > 1$ dimensions, Phil. Mag. Lett. 78, 177, (1998).

11. I. Daruka, Zs. Gulácsi, Correlation transitions in the Ising chain with competing short-range and long-range mirror interactions, Phys. Rev. E58, 5403, (1998).

12. G. Opposits, Zs. Gulácsi, Exact solution for a chain-like cluster growth model for a finite particle size, Phil. Mag. B81, 21, (2001).

13. E. Kovács, Zs. Gulácsi, Unitary transformations used in the study of phase diagram of strongly correlated systems, Phil. Mag. B81, 341-358, (2001).

14. P. Gurin, Zs. Gulácsi, $T \geq 0$ properties of the infinitely repulsive Hubbard model for arbitrary number of holes, Phil. Mag. B81, 321-339, (2001).

15. E. Kovács, Zs. Gulácsi, Study of the t-J model in the low density limit, Phil. Mag. B81, 1557, (2001).

16. I. Orlik, Zs. Gulácsi, Exact results for the one-dimensional periodic Anderson model at finite U, Phil. Mag. B81, 1587, (2001).

17. P. Gurin, Zs. Gulácsi, The $U = \infty$ Hubbard model with few holes: Monte Carlo studies near half-filling at non-zero temperatures, Phil. Mag. B81, 1621, (2001).

18. Zs. Gulácsi, I. Orlik, New non-Fermi-liquid-type behaviour by a two-band system in normal phase, Jour. Phys. A. Lett. A34, L359, (2001).

19. P. Gurin, Zs. Gulácsi, Exact solutions for the periodic Anderson model in two dimensions: A non-Fermi-liquid state in the normal phase, Phys. Rev. B64, 045118, (2001) (and Phys. Rev. B65, 129901(E), (2002), Erratum).

20. P. Gurin, Zs. Gulácsi, Magnetic properties of the infinitely repulsive Hubbard model near half filling, Czech. Jour. Phys. 52, 119, (2002).

21. E. Kovács, Zs. Gulácsi, Four electrons in a two-leg Hubbard ladder: Exact ground states, Jour. of Phys. A. A38, 10273, (2005).

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24. I. Chalupa, Zs. Gulácsi, Quadratic operators used in deducing exact ground states for correlated systems: ferromagnetism at half filling provided by a dispersive band, Jour. of Phys.: Condens. Matter. 19, 386209, (2007).

25. R. Trencsényi, E. Kovács, Zs. Gulácsi, Correlation and confinement induced itinerant ferromagnetism in chain structures, Phil. Mag. 89, 1953, (2009).

26. R. Trencsényi, Zs. Gulácsi, Ferromagnetism without flat bands in thin arm-chair nanoribbons, Eur. Phys. Jour. B75, 511, (2010).

27. R. Trencsényi, K. Gulácsi, E. Kovács, Zs. Gulácsi, Exact ground states for polyphenylene type of hexagon chains, Ann. Phys. (Berlin) 523, 741, (2011).

28. R. Trencsényi, Zs. Gulácsi, The emergence domain of an exact ground state in a non-integrable system: the case of the polyphenylene type of chains, Phil. Mag. 92, 4657, (2012).

29. E. Kovács, R. Trencsényi, Zs. Gulácsi, Magnetic nano-grains from non-magnetic material: a possible explanation, IOP Conf. Series 47, 012048 (2013).

30. M. Gulácsi, Gy. Kovács, Zs. Gulácsi, Exact ferromagnetic ground state of pentagon chains, Phil. Mag. Lett. 94, 269-277, (2014).

31. R. Trencsényi, K. Glukhov, Zs. Gulácsi, Exact ground state for the four-electron problem in a 2D finite honeycomb lattice, Phil. Mag. 94, 2195-2223, (2014).

32. M. Gulácsi, Gy. Kovács, Zs. Gulácsi, Flat band ferromagnetism without connectivity conditions in the flat band, Europhysics Lett. 107, 57005, (2014).

33. M. Gulácsi, Gy. Kovács, Zs. Gulácsi, An extension to flat band ferromagnetism, Mod. Phys. Lett. B. 28, 1450220 (2014).

34. Gy. Kovács, K. Glukhov, Zs. Gulácsi, Quadrilateral quantum chain Hamiltonian cast in positive semidefinite form containing non-linear fermionic contributions, WSEAS Transactions on Applied and Theoretical Mechanics, 10, 187-193 (2015).

35. Gy. Kovács, Zs. Gulácsi, Pentagon chains in external fields, Phil. Mag. 95, 3674-3695 (2015).

Awards, prizes, fellowships gained by advised students from University of Debrecen

a) At National Research Student Conferences (OTDK) in Hungary

- I. Prize: Mátyás Hunyadi, Natural Sciences Section: Physics, Material Sciences Subsection, Gödöllő 13.04.1995.

- I. Prize: Péter Gurin, Natural Sciences Section, Theoretical Physics Subsection, Nyiregyháza 26.03.1997

- III. Prize: Endre Kovács, Natural Sciences Section, Theoretical Physics Subsection, Debrecen 02.04.1999.

- III. Prize: Réka Trencsényi, Physics Geography and Mathematics Section, Condensed Matter Subsection, Nyiregyháza 28.04.2011.

b) Outside of Hungary

- Zsolt Szabó: DAAD Research Fellowship in Germany, University Köln, Department of Theoretical Physics, 1997: Group of Prof. J. Hajdu.

- István Daruka: Research Fellowship at University Notre Dame, USA, Department of Physics, Center for complex networks: Group of Prof. A. L. Barabasi, 1996-1999.

- Endre Kovács: Overseas Research Students Awards (Founded by the Secretary of State for Education and Science U.K.), University of Loughborough, U.K., (2002-2005), see http://www.orsas.ac.uk/england/

- Réka Trencsényi, The James Clerk Maxwell Young Writers Prize: highly commended author, 2009, Awarded by the James Clerk Maxwell Foundation U.K., see http://www.tandf.co.uk/journals/authors/tphm-tphl-prize.asp#winner2009 and E. A. Davis: Phil. Mag. **90** (12), 1543-1546 (2010).