

## Curriculum Vitae

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PhD Student  
Department of Physics,  
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Birth: Budapest, 1988.  
Married, father of one

### Research interest

- Fabrication of van der Waals heterostructures and nanocircuits
- Electron and spin transport in 2 dimensional systems
- Electron transport in van der Waals heterostructures under hydrostatic pressure

### Education

2014 MSc degree in Physics, Budapest University of Technology and Economics  
2012 Diplôme d'Ingénieur Généraliste, Ecole Centrale de Lille  
2010 BSc in Physics, Budapest University of Technology and Economics

### Employment

2014– Research assistant at the Department of Physics, BME

### Important experiences abroad

2010–2012 T.I.M.E. double degree program, second degree in general engineering in  
École Centrale de Lille  
2011, 2012 Internships (1 month, 2 months, 3 months) in fabrication and low tem-  
perature transport measurement of InAs nanowires based nanocircuits  
at IEMN with the supervision of dr. Renaud LETURQC, Lille, France  
2014 6 months research visit to the group of prof. Christian SCHÖNENBERGER,  
Basel, Switzerland. Topic: fabrication of van der Waals heterostructures

## Teaching activity

- Physics Laboratory Course for Students in Physics
- Advanced Physics Laboratory Course for Students in Physics
- Introduction to Physics for Students in Electrical Engineering (various courses)

## Co-supervision of students

- Gergő IVÁN, BSc 2016
- Máté KEDVES, BSc 2017
- Albin MÁRFFY, BSc 2018, TDK 2019, MSc 2020

## Languages

English (fluent), French (fluent), German (basic), Hungarian (mother tongue)

## Schools and conferences

Participation and poster presentations in various conferences and workshops including Graphene Week conference; Graphene Study winter school; Frontiers of Condensed Matter summer school; Flatlands Beyond Graphene conference; Grandmaster PhD Workshop in Physics; A World of Correlations, Alfréd Zawadowski Memorial Conference; QDrive Budapest Workshop on quantum computing; Data Analysis with Pandas summer school.

## References

- [1] C. Handschin, B. Fülöp, P. Makk, S. Blanter, M. Weiss, K. Watanabe, T. Taniguchi, S. Csonka, and C. Schönberger, “Point contacts in encapsulated graphene,” *Appl. Phys. Lett.*, vol. 107, p. 183108, Nov. 2015.
- [2] B. Fülöp, Z. Tajkov, J. Pető, P. Kun, J. Koltai, L. Oroszlány, E. Tóvári, H. Murakawa, Y. Tokura, S. Bordács, L. Tapasztó, and S. Csonka, “Exfoliation of single layer BiTeI flakes,” *2D Materials*, vol. 5, p. 031013, jun 2018.
- [3] Z. Scherübl, A. Pályi, G. Frank, I. E. Lukács, G. Fülöp, B. Fülöp, J. Nygård, K. Watanabe, T. Taniguchi, G. Zaránd, and S. Csonka, “Observation of spin-orbit coupling induced weyl points in a two-electron double quantum dot,” *Communications Physics*, vol. 2, p. 108, Sept. 2019.

- [4] Z. Kovács-Krausz, A. M. Hoque, P. Makk, B. Szentpéteri, M. Kocsis, B. Fülöp, M. V. Yakushev, T. V. Kuznetsova, O. E. Tereshchenko, K. A. Kokh, I. E. Lukács, T. Taniguchi, K. Watanabe, S. P. Dash, and S. Csonka, “Electrically controlled spin injection from giant rashba spin-orbit conductor bitebr,” *Nano Lett.*, vol. 20, pp. 4782–4791, July 2020.
- [5] P. Kun, B. Fülöp, G. Dobrik, P. Nemes-Incze, I. E. Lukács, S. Csonka, C. Hwang, and L. Tapasztó, “Robust quantum point contact operation of narrow graphene constrictions patterned by afm cleavage lithography,” *npj 2D Materials and Applications*, vol. 4, p. 43, Dec. 2020.