

**Universitatea Babeş-Bolyai**  
**Facultatea de Fizică**  
**Departamentul de Fizică al Liniei Maghiare**  
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**LISTA**

**lucrărilor științifice în domeniul disciplinelor din postul didactic**

**A. Teza de doctorat**

*Sándor Borbély*, Theoretical Study of the Interaction Between Atomic and Molecular Systems and Ultrashort Laser Pulses, Universitatea Babeş-Bolyai, Școala doctorală Fizică. 2010

**B. Cărți și capitole în cărți publicate în ultimii 10 ani**

1. L Nagy, F Járαι-Szabó, S Borbély, T Arthanayaka, BR Lamichhane, A Hasan, M Schulz, Wave packet scattering in intermediate-energy p-He collisions, in State-of-the-Art Reviews on Energetic Ion-Atom and Ion-Molecule Collisions, 2019, WORLD SCIENTIFIC,

**C. Lucrări indexate ISI/BDI publicate în ultimii 10 ani**

1. S. Borbély, A. Tóth, K. Joós, L. Nagy. Photoelectron holography in a pump-drive setup. *Physical Review A*, Vol. 113 (1), 013107 (2026), DOI: <https://doi.org/10.1103/PhysRevA.113.013107>
2. A. Tóth, S. Borbély, Y. Zhou, A. Csehi. Role of dynamic Stark shifts in strong-field excitation and subsequent ionization. *Physical Review A*, Vol. 107 (5), 053101 (2023), DOI: <https://doi.org/10.1103/PhysRevA.107.053101>
3. A. Tóth, S. Borbély, A. Csehi. Dynamic interference in below-threshold ionization. *Physical Review A*, Vol. 108 (6), L061101 (2023), DOI: <https://doi.org/10.1103/PhysRevA.108.L061101>
4. S. Bastola, M. Dhital, S. Majumdar, A. Hasan, R. Lomsadze, J. Davis, S. Borbély, et al. Interference Effects in Fully Differential Ionization Cross Sections near the Velocity Matching in P+ He Collisions. *Atoms*, Vol. 10 (4), 119 (2022), DOI: <https://doi.org/10.3390/atoms10040119>
5. Z. Bálint, S. Borbély, L. Nagy. Excitation of Helium by Proton and Antiproton Impact. *Atoms*, Vol. 12 (11), 57 (2024), DOI: <https://doi.org/10.3390/atoms12110057>
6. S. Borbély, A. Tóth, DG. Arbó, K. Tókési, L. Nagy. Photoelectron holography of atomic targets. *Physical Review A*, Vol. 99 (1), 013413 (2019), DOI: <https://doi.org/10.1103/PhysRevA.99.013413>
7. S. Borbély, XM. Tong, S. Nagele, J. Feist, I. Březinová, F. Lackner, L. Nagy, et al. Electron correlations in the antiproton energy-loss distribution in He. *Physical Review A*, Vol. 98 (1), 012707 (2018), DOI: <https://doi.org/10.1103/PhysRevA.98.012707>

8. L. Nagy, F. Járαι-Szabó, S. Borbély. The effect of projectile wave packet width on the fully differential ionization cross-sections. *Journal of Physics B: Atomic, Molecular and Optical Physics*, Vol. 51 (14), 144005 (2018), DOI: <https://doi.org/10.1088/1361-6455/aac8d9>
9. Z. Sárkőzi, S. Borbély, F. Járαι-Szabó. Deepening secondary students understanding of physics through escape games. *AIP Conference Proceedings*, Vol. 2071 (1), 050001 (2019), DOI: <https://doi.org/10.1063/1.5090059>
10. GZ. Kiss, S. Borbély, A. Tóth, L. Nagy. Photoelectron holography of the H<sub>2</sub><sup>+</sup> molecule. *The European Physical Journal D*, Vol. 74 (6), 128 (2020), DOI: <https://doi.org/10.1140/epjd/e2020-10122-6>
11. T. Arthanayaka, BR. Lamichhane, A. Hasan, S. Gurung, J. Remolina, S. Borbély, et al. Fully differential study of wave packet scattering in ionization of helium by proton impact. *Journal of Physics B: Atomic, Molecular and Optical Physics*, Vol. 49 (13), 13LT02 (2016), DOI: <https://doi.org/10.1088/0953-4075/49/13/13LT02>
12. A. Tóth, S. Borbély, GJ. Halász, Á. Vibók. Strong field dissociative ionization of the D<sub>2</sub><sup>+</sup>: Nuclear wave packet analysis. *Chemical Physics Letters*, Vol. 683, 567–572 (2017), DOI: <https://doi.org/10.1016/j.cplett.2017.01.059>
13. A. Tóth, S. Borbély, GZ. Kiss, GJ. Halász, Á. Vibók. Toward the Full Quantum Dynamical Description of Photon Induced Processes in D<sub>2</sub><sup>+</sup>. *The Journal of Physical Chemistry A*, Vol. 120 (47), 9411–9421 (2016), DOI: <https://doi.org/10.1021/acs.jpca.6b09440>

#### **D. Lucrări publicate în ultimii 10 ani în reviste și volume de conferințe cu referenți (neindexate)**

##### **– Reviste**

L. Nagy, S. Borbély. Fotoelektron-holografia. *Fizikai Szemle* 2025 (9), 298–304 (2025).

##### **– Selecție cu maximum 20 lucrări în volume de conferințe**

14. S. Borbély, A. Tóth, K. Tőkési, L. Nagy. Laser-induced electron diffraction in a pump–probe setup using half-cycle electric pulses. *Physica Scripta*, T156, 014066 (2013).
15. A. Tóth, S. Borbély, K. Tőkési, L. Nagy. Ionization of atoms by few-cycle EUV laser pulses: carrier-envelope phase dependence of the intra-pulse interference effects. *The European Physical Journal D* 68 (11), 339 (2014).
16. GZ. Kiss, S. Borbély, L. Nagy. An efficient numerical discretization method for the study of the H<sub>2</sub><sup>+</sup> in intense laser fields. *AIP Conference Proceedings* 1694 (1), 020017 (2015).
17. F. Járαι-Szabó, S. Borbély, L. Nagy. Projectile coherence effects studied by ab initio calculations. *Journal of Physics: Conference Series* 635 (2), 022037 (2015).
18. A. Tóth, S. Borbély, GJ. Halász, Á. Vibók. Towards a complete dynamical description of D<sub>2</sub><sup>+</sup> in strong laser fields. *Journal of Physics: Conference Series* 635 (11), 112138 (2015).

19. S. Borbély, A. Tóth, K. Tőkési, L. Nagy. Ionization of noble gas atoms by few-cycle laser pulses: spatial interference effects. *Journal of Physics: Conference Series* 635 (9), 092085 (2015).
20. M. Schulz, A. Hasan, B. Lamichhane, T. Arthanayaka, M. Dhital, S. Bastola, S. Borbély, et al. Projectile Coherence Effects in Simple Atomic Systems. *Journal of Physics: Conference Series* 1412 (6), 062007 (2020).
21. L. Nagy, F. Járαι-Szabó, S. Borbély, K. Tőkési. Projectile coherence effects analyzed using impact parameters determined by classical trajectory Monte Carlo calculations. *Journal of Physics: Conference Series* 1412 (15), 152032 (2020).
22. S. Borbély, A. Tóth, GZ. Kiss, L. Nagy. Target sensitivity of photoelectron holograms. *Journal of Physics: Conference Series* 1412 (15), 152083 (2020).
23. L. Nagy, F. Járαι-Szabó, S. Borbély, T. Arthanayaka, BR. Lamichhane, et al. Wave packet scattering in intermediate-energy p-He collisions. *State-of-the-Art Reviews on Energetic Ion-Atom and Ion-Molecule Collisions* (2019).

#### **E. Brevete obținute în întreaga activitate**

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Data:

Semnătura: