



# INSTITUTE FOR NUCLEAR RESEARCH (ATOMKI)

<https://atomki.hu/en/>

- **Located in Debrecen**
- **Founded in 1954**
- **Member of the Eötvös Loránd Research Network**
- **Hungarian Academy of Sciences Centre of Excellence**
- **European Physical Society – EPS Historic Site**
- **16 MoU and agreements with international parties**
- **11 consortial research projects**
- **181 employees of which 94 researchers**
- **316 publications (2020)**
- **12497 citations (2019)**
- **Impact Factor: 1060.1 (2020)**

The **Institute for Nuclear Research** is open to further joint research activities at international level.

For any additional information on possible international cooperation please contact Mr. Zsolt DOMBRÁDI DSc at [director@atomki.hu](mailto:director@atomki.hu).

Researchers at the **Institute for Nuclear Research** have never believed in borders between scientific fields; in the 67 years of the history of the Institute, the interdisciplinary approach has always been strong, and proved to be successful as well. In the early years, as an example, the investigation of nuclear decay led to an indirect proof of the existence of the neutrino. Recently, this achievement was the basis for an award from the European Physical Society (EPS), which designated ATOMKI as one of the Historic Sites in Europe.

Today, the Institute continues its scientific research in the same direction. Its laboratories and teams – though independent – can cooperate to solve problems effectively. These efforts are marked by grants – from the ERC to H2020 – just to mention a couple.

Modern science is without borders, and so is ATOMKI, with its hundreds of collaborations from all over the world. ATOMKI researchers are present in the leading nuclear and particle physics laboratories of the world, and ATOMKI with its small-scale Accelerator Centre also hosts researchers supported by the European Transnational Access (TNA) scheme. ATOMKI laboratories are open-access, and are always seeking collaborators to join their efforts and/or open up new directions.

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### Scientific sections of ATOMKI

- Section of Atomic and Molecular Physics
- Section of Theoretical Physics
- Section of Surface Physics
- Section of Experimental Nuclear Physics
- Section of Environmental Physics
- Section of Applied Nuclear Physics
- Section of Particle Physics

The activity of the research groups of the Institute is well embedded in that of leading international collaboration networks. The research infrastructure of ATOMKI provides a firm basis for fundamental and applied experimental work.

### Research infrastructure of ATOMKI (most of them upgraded recently)

- Laboratory of Nuclear Physics
- Laboratory of Atomic and Molecular Physics
- Laboratory of Theoretical Physics
- Laboratory of Material Science
- Cyclotron Laboratory
- Tandetron Laboratory
- Laboratory of Electronics
- Laboratory for Heritage Science
- Laboratory of Climatology and Environmental Physics
- Laboratory of Environmental Analytics
- International Radiocarbon AMS Competence and Training Center

### Human resources

In the **Institute for Nuclear Research** the average number of employees was 181 in 2020, of which the number of researchers was 94. 20% of the researchers were women. 16 held the title of Doctor of the Hungarian Academy of Sciences, and 61 had a PhD. The rate of young researchers (under 35) was 29%.

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### Institutional membership in international organisations:

- Reactions with Relativistic Radioactive Beams (R3B) Collaboration
- The Advanced Gamma Tracking Array (AGATA) Collaboration
- Laboratory for Underground Nuclear Astrophysics (LUNA) Collaboration
- CERN CMS (Compact Muon Solenoid) Collaboration
- EUROPLANET Society
- European Research Infrastructure for Heritage Science (E-RIHS)
- Integrated Carbon Observation System (ICOS)

### List of the main achievements of the Institute for Nuclear Research in 2020

- Mossa V, Csedreki L, Elekes Z, Fülöp Zs, Gyürky Gy, Szücs T, et al. (50 authors) 2020. *The baryon density of the Universe from an improved rate of deuterium burning.* NATURE **587**, 210-213 ([link](#))
- Cederwall B, Liu X, Kuti I, Nyakó BM, Sohler D, Timár J, et al. (71 authors) 2020. *Isospin Properties of Nuclear Pair Correlations from the Level Structure of the Self-Conjugate Nucleus <sup>88</sup>Ru.* PHYSICAL REVIEW LETTERS **124**, 062501 ([link](#))
- Soha M, Braun M, Takáts V, Haki J, Fodor T, Braun Á, Vad K, et al (10 authors) 2020. *Investigation of ppb-level surface contamination of n-type silicon solar cells.* APPLIED SURFACE SCIENCE **520**, 146299 ([link](#))
- Varga T, Sajtos Zs, Gajdos Z, Jull AJT, Molnár M, Baranyai E. 2020 *Honey as an indicator of long-term environmental changes: MP-AES analysis coupled with <sup>14</sup>C-based age determination of Hungarian honey samples.* SCIENCE OF THE TOTAL ENVIRONMENT **736**, 139686 ([link](#))

