

Anu Kankainen

Väisälä Prizes are awarded annually to distinguished scientists in mathematics and science who are in the active part of their careers. The prizes are worth 15,000 euros.

Professor Anu Kankainen's field of research, nuclear astrophysics, aims to examine the origin of elements in the universe. In her research, Kankainen has focused especially on the precision mass measurements of radioactive isotopes. Through these masses, we can gain information on nuclear binding energies and how much energy is released in nuclear reactions in stars, which in turn affects the probability of nuclear reactions.

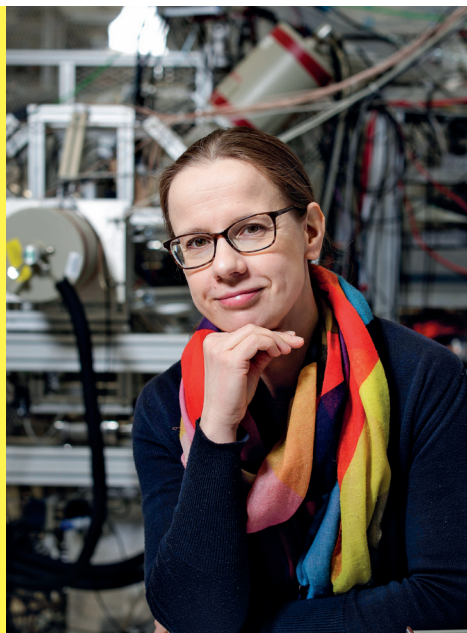
Kankainen defended her doctoral thesis in 2006 in the Department of Physics at the University of Jyväskylä and then worked as a postdoctoral researcher at the Academy of Finland and an Academy Research Fellow at the University of Jyväskylä. From 2013 to 2014, Kankainen worked as a researcher at the University of Edinburgh in Scotland.

“Following a series of twists and turns, I ended up studying physics at the University of Jyväskylä and during the course of my studies, I got more and more excited about research,” says Kankainen. “Towards the end of my studies, I completed a course in nuclear physics, which put me on the path to becoming a nuclear physicist: the course was extremely inspiring and, among other things, led me to become a summer trainee at the Accelerator Laboratory of the University of Jyväskylä. Soon after this, I applied for doctoral studies.”

In 2017, Kankainen received the esteemed and generous ERC Consolidator Grant from the European Research Council for her research project MAIDEN (Masses, Isomers and Decay Studies for Elemental Nucleosynthesis). She was appointed Associate Professor in 2019 and Professor in 2022.

Kankainen is one of the most distinguished young experts in her field of research and has an extensive international cooperation network in Europe and the

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United States. She has published almost 200 research articles, including several publications in leading journals in her field. In addition, she holds several positions of trust related to research.

“Research in nuclear astrophysics is very international by nature. We conduct measurements in large research groups, for one to two weeks at a time,” says Kankainen. “The best part about my job are the measurements and what we may discover through them, and working together with all kinds of people.”

Experimental research led by Kankainen has been conducted mainly at the Accelerator Laboratory of the University of Jyväskylä, but also in other leading research

centres in the field, such as CERN, GSI-FAIR and NSCL Michigan State University. This research has produced extremely precise mass and binding energy data for more than one hundred rare radioisotopes and several metastable nuclear states.

“It always feels great to discover something that nobody else has discovered before. There is currently a lot going on internationally in nuclear astrophysics research. For example, a new accelerator laboratory has just been opened in the United States, which can produce extremely neutron-rich nuclei and study their properties. My personal dreams have to do with how much we can discover in the years to come.”

Image: Petteri Kivimäki