

# Ritva Serimaa

\* 20/9/1957 † 12/4/2016



**RITVA ELINA SERIMAA** (née Ström, born 20.9.1957 in Hamina) died of a serious illness at the age of 58 years in Hamina on 12th April 2016. She had been a professor of physics at the University of Helsinki since 2004.

She had developed an interest in physics while still a child, through her father, who was an electrician and was very interested in this subject. She started to study physics at the University of Helsinki, where she gained a master's degree in 1982, a licentiate in 1986 and a doctorate in 1990. She was appointed docent in physics in 1998.

Ritva Serimaa's entire career was dedicated to guiding the tradition-steeped Laboratory of X-ray Physics at the University of Helsinki towards new challenges. Her doctoral thesis was centred on the study of weakly ordered matter and one important object of study in it was natural nanostructures such as cellulose. At the same time the X-ray science at the University of Helsinki was moving over to availing itself of the services of international synchrotron radiation laboratories, which opened up previously unenvisioned opportunities for performing more precise experiments. Combining these possibilities, Serimaa

left for California immediately after completing her doctorate and worked at the synchrotron light source at Stanford University in 1991–1993. There her main tool was small-angle X-ray scattering, which she subsequently employed with great success both in her own laboratory in Helsinki and with many synchrotron light sources around the world. Research in this rapidly developing field was very heavily reliant on the analysis of the data recorded and on the use of various simulation methods, and Serimaa became well known and respected internationally for precisely this. She also received the support that she needed in this work from her own husband, theoretical physicist Olli Serimaa, who, as an extremely well-liked teacher at the University of Helsinki during the 1980s, had inspired many of our current professors of physics to take up a scientific career.

Ritva Serimaa was one of the pioneers of multidisciplinary research, partly because there is a widespread need for structural data on weakly ordered matter in various branches of science, and this is reflected in the fact that she produced joint publications with people from six faculties in the University of Helsinki, the

objects of study being as diverse as natural polymers, plastics, pharmaceuticals, food science and even cancer cells. One interesting example of such a material concerns the structure of the wood of the *Vasa*, a warship that sank off Stockholm on its maiden voyage in the 17th century and, having been raised to the surface and installed in a museum, was in danger of destruction by sulphur compounds. Her most influential scientific work, however, was carried out in the field of polymers, where one paper published jointly with researchers at the Aalto University in Science in 1998 has been cited more than 500 times to date.

Ritva Serimaa was a highly productive researcher, with more than 230 papers in peer-reviewed journals and over 6000 recorded citations of these. She also had a vast network of collaborators, including more than 200 people with whom she had joint publications. Alongside her own work she also played an important part in the training of postgraduates in research methods. In the course of her career she supervised 16 doctoral theses and thus occupied a key position in raising a whole new generation of Finns for the study of material structures. Most of these doctoral candidates occupied key positions in joint multidisciplinary projects, which gave them a good start in their own careers and enabled them to take up responsible research positions either abroad or in the private sector.

Ritva Serimaa was the first woman to become a professor of physics at the University of Helsinki when she was appointed in 2004, and this gave her a significant role as an example for talented female students. Although she was an equally demanding supervisor to all her students, the role model of a successful female professor that she fulfilled did much to encourage equal opportunity in her field.

She was elected a member of the Finnish Academy of Science and Letters in 2010 and chairman of the Finnish Physical Society in 2011, again becoming the first, and for the present the only, woman to hold the latter position even though the society was founded in 1947. She also held a number of offices in international scientific societies.

Ritva Serimaa was a modest, cheerful person for whom science and the scientific community played a major part in her life. She loved music, especially rock and heavy metal music, and this was reflected in her custom of staying late at evening parties and listening to music with the young students into the early hours of the morning. She looked on these more relaxed moments as important encounters for a mentor, times when the young people grow into fully fledged members of the scientific community. Ritva was also fulfilling this important function when serving in the distinguished capacity of inspector of the university's Kymenlaakso Student Nation.

*Obituary by  
Keijo Hämäläinen and Simo Huotari*