An Early Career Researcher[[1]](#footnote-1) position for two years has been opened at the Environmental Physics Department of the Centre for Energy Research (Budapest, Hungary) in the frame of the RadoNorm project (Towards effective radiation protection based on improved scientific evidence and social considerations – focus on Radon and NORM, [www.radonorm.eu](http://www.radonorm.eu)). The main task of the postdoctoral researcher will be to estimate individual sensitivity in specific groups by quantifying the effects of different diseases on absorbed doses in the lungs.

Airway deposition and subsequent doses of inhaled radioactive particles depend on the anatomy of the airways and on the breathing mode. Both factors may be altered in pathological conditions leading to specific deposition patterns, doses and dose distributions. It has been demonstrated that common diseases such as asthma or chronic obstructive pulmonary disease (COPD) may lead to specific breathing patterns due to decay in lung function but also to airway remodelling. In addition to the change in the calibre of the airways, airway diseases may lead to changes in mucus thickness as well as in composition and thickness of the lung epithelium influencing the dose received by its radiosensitive cells. The successful candidate will develop and apply computational models considering inhalation, deposition, and exhalation of aerosols, and radiation transport in the lungs.

The ideal candidate has a PhD degree in a quantitative field, good programming skills, and shows strong interest in biology. Experience in international multidisciplinary research would be an advantage as well as the knowledge of Fortran/Rust/Geant4.

The successful candidate will benefit from the RadoNorm education and training program.

Interested applicants should send a motivation letter, a CV, and the names and email addresses of two references to Balázs Madas ([balazs.madas@ek-cer.hu](mailto:balazs.madas@ek-cer.hu)) before 31st July.

1. having less than 5-year-long work expereince since obtaining the PhD degree. [↑](#footnote-ref-1)