

Matter and environment

The cases presented here cover the new applications and new technologies developed at Birmingham to study matter and the environment, on scales ranging from microns to light years.

The exploration of micro-worlds is made possible using micro X-ray tomography. The use of fluorescent imaging combined with spectroscopy and image analysis enables detailed quantitative studies of environmental problems, such as water quality, as well as aiding the understanding of climate changes in pre-historic times. Much further away from home, the use of innovative hyperspectral imaging and pattern recognition techniques in X-ray astronomy enables quantitative and qualitative studies of remote galaxies.

- [Fluorescence imaging in environmental sciences \(/research/activity/crni/projects/matter-environment/fluorescence-imaging-environmental-sciences.aspx\)](/research/activity/crni/projects/matter-environment/fluorescence-imaging-environmental-sciences.aspx)
- [X-ray Astronomy \(/research/activity/crni/projects/matter-environment/x-ray-astronomy.aspx\)](/research/activity/crni/projects/matter-environment/x-ray-astronomy.aspx)
- [The mechanisms of neuronal functions \(/research/activity/crni/projects/matter-environment/mechanisms-neuronal-functions.aspx\)](/research/activity/crni/projects/matter-environment/mechanisms-neuronal-functions.aspx)