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Synchrotron x-ray and neutron imaging for the investigation of fuel cells

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Tomography and radiography are non-destructive investigation methods that are successfully applied in various fields in materials science and fundamental research. Neutron and x-ray imaging can be used for investigation of polymer electrolyte membrane fuel cells (PEMFC) and their components on different length scales. X-ray imaging resolves inner sample details with micrometric spatial resolution. The ability of neutron radiation to penetrate thick layers of metals and being extremely sensitive to small amounts of hydrogenous materials at the same time allows for investigation of the water management in PEMFCs. In this way the information gained by complementary non-destructive investigation of samples by x-ray and neutron tomography is unique.

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