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Recent progress of neutron imaging facility and applications at China Advanced Research Reactor

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A thermal neutron imaging facility and a cold neutron imaging facility are under construction at China Advanced Research Reactor (CARR). At present, some main components, such as collimator, sample table, detection system, etal have been finished, and the others are under construction. The thermal neutron imaging facility will be operated in two modes: high intensity and high resolution depending on the distance between the sample and the aperture. The cold neutron imaging facility is more flexible, and sample can be placed at several positions, depending on the research demands. With the neutron imaging testing station built at the end of one neutron guide, many applications had been carried out, including testing Zr alloy nuclear fuel cladding, fuel cell, lithium battery, plants, rocks, fossils and so on. Both the neutron radiography and neutron tomography methods were studied.

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