



Experiment Report Form



	Experiment title: High-pressure study of graphitic carbon nitrides modified with transition metals	Experiment number: CH-5993
Beamline: ID15B	Date of experiment: from:04.02.2022 to:07.02.2022	Date of report: 16.02.2022
Shifts: 9	Local contact(s): Michael Hanfland	<i>Received at ESRF:</i>
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Report:

Due to CORONA regulations, our experiment has been re-scheduled several times.

In the frame of our experiment, we performed HP study of multicomponent alloys and g-C₃N₄ modified with 3d-metallic nanoparticles. We selected fcc-structured IrOsPtRhRu and Cantor alloy (fcc-MnFeCoCrNi) high-entropy alloys to be compressed in He as pressure transmitting medium up to 55 GPa at room temperature. Both systems are references for our further study of reactions of HEAs under pressure. g-C₃N₄ modified with 3d-metallic nanoparticles were studied in in He as pressure transmitting medium up to 25 GPa at room temperature. Materials show regular compression without structure collapse or phase transitions. Compressibility depends on doping level and chemical nature of dopants which has been predicted by DFT modelling.