

Sample Environment JRA				Quarter																		
WP	Tasks	Sub tasks	Activities, Deliverables & Milestones	Description	Responsible	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
W21	21.1	<b>21.1.1 Annual reports</b>		<b>Management, dissemination and networking of the JRA</b>																		
		D 21.1.1.1	1st annual report	All																		
		D 21.1.1.2	2nd annual report	All																		
		D 21.1.1.3	3rd annual report	All																		
		D 21.1.1.4	4th annual report - final report	All																		
		<b>21.1.2 JRA meetings</b>																				
		D 21.1.2.1	1st JRA meeting minutes	STFC																		
		D 21.1.2.2	2nd JRA meeting minutes	STFC																		
		D 21.1.2.3	3rd JRA meeting minutes	STFC																		
		D 21.1.2.4	4th JRA meeting minutes	STFC																		
	<b>21.1.3 Website</b>																					
	D 21.1.3.1	Website launched	STFC																			
	D 21.1.3.2	Final results published on website	All																			
	21.2	<b>21.2.1 Inert Gas Cells</b>		<b>High Pressure Gas Cells</b>																		
		D 21.2.1.1	Report on current inert gas pressure cell technology	STFC																		
		M 21.2.1.1	Design plan review for cells for pressures up to 8 kbar	LLB																		
		D 21.2.1.2	Manufacture two cells for up to 8 kbar (CEA)	LLB																		
		D 21.2.1.3	13-15 kbar hydraulic intensifier for cell testing: assemble	STFC																		
		M 21.2.1.2	10 kbar automated gas handling system specifications	STFC																		
		D 21.2.1.4	Procure 10 kbar automated gas handling system (SFTC)	STFC																		
M 21.2.1.3		Design plan review for cell up to 10 kbar at 300K	LLB																			
D 21.2.1.5		Manufacture two prototype cells up to 10 kbar (CEA)	LLB																			
D 21.2.1.6		Procurement of LLB cryogenic system for pressure measurements	LLB																			
D 21.2.1.7		Procure 10 kbar automated gas handling systems (CEA)	LLB																			
<b>21.2.2 Hydrogen Cells</b>																						
D 21.2.2.1		Report on material research: H <sub>2</sub> and neutron compatibility	STFC																			
M 21.2.2.1		Cell material and seal design review	STFC																			
D 21.2.2.2		Commissioning of HMI 10 kbar H <sub>2</sub> handling system	HZB																			
D 21.2.2.3		Procurement of ISIS 8-10 kbar H <sub>2</sub> handling system	STFC																			
D 21.2.2.4		Manufacture and test prototype cell for 4 kbar and up to 700K	STFC																			
D 21.2.2.5		Manufacture and test prototype cell for 6 kbar and up to 300K	STFC																			
M 21.2.2.2	Design plan review for cell for 8 kbar at 4-300K	STFC																				
D 21.2.2.6	Manufacture and test prototype cell for 8 kbar at 4-300K	STFC																				
D 21.2.2.7	Review of pressure cell development and test results	STFC																				
W21	21.3	<b>21.3.1 Aerodynamic levitation furnace</b>		<b>Levitation Furnaces</b>																		
		D 21.3.1.1	Furnace design and drawing	ILL																		
		M 21.3.1.1	Design review	ILL																		
		D 21.3.1.2	Nozzle design study report	ILL																		
		D 21.3.1.3	Manufacture and test furnace prototype	ILL																		
		M 21.3.1.2	Review of electrode-less technique specifications	ILL																		
		D 21.3.1.4	Manufacture and test electrode-less technique	ILL																		
		<b>21.3.2 Electrostatic levitation</b>																				
		M 21.3.2.1	Meeting: evaluation of design principles	FRM-II																		

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			D 21.3.2.1	Design review of sample position electrostatic systems/laser	FRM-II																
			M 21.3.2.2	Review of mechanical design	FRM-II																
			D 21.3.2.2	Manufacture and test control systems	FRM-II																
			D 21.3.2.3	Test report on system	FRM-II																
21.4			<b>Gas Adsorption Systems</b>																		
		21.4.1	<b>Remote control process system, 300 bar/200°C</b>																		
			D 21.4.1.1	Build adsorption isotherm sample prep. p<1.5bar; T:1.5-600K	HZB																
			M 21.4.1.1	Review of system parameters	HZB																
			D 21.4.1.2	Gas handling system with dynamic flow: 300 bar; up to 500K	HZB																
		21.4.2	<b>Gravimetric measurement system, 300 bar/20-500K</b>																		
			D 21.4.2.1	Build magnetic suspension balance for neutron environments	HZB																
			M 21.4.2.1	Review of system parameters	HZB																
			D 21.4.2.2	Addition of vapour mixing option: p<35bar; T<400K	HZB																
			D 21.4.2.3	Extension of temperature range 20-700K at low pressures	HZB																

<b>Sample Environment JRA4</b>				1	2
Work package	Tasks	Activities, Deliverables and Milestones	Description		
<b>W1</b>			<b>High Pressure Gas Cells</b>		
	<b>T1.1</b>		<b>Inert Gas Cells</b>		
		A1	<i>Design and produce cells up to 8 kbar (1.5 – 300 K)</i>		
		A2	<i>15 kbar hydraulic intensifier for cell testing</i>		
		A3	<i>10 kbar automated gas handling system for inert gases</i>		
		A4	<i>Design and prototype 10 kbar cells for 300 K</i>		
	<b>T1.2</b>		<b>Hydrogen Cells</b>		
		A1	<i>Materials Research – H<sub>2</sub> compatibility/neutron transmission</i>		
		A2	<i>Ambient temperature high pressure H<sub>2</sub> system</i>		
		A3	<i>Produce and test cell for 4 kbar and up to 700 K</i>		
		A4	<i>Produce and test cell for 6 kbar and up to 300 K</i>		
		A5	<i>Design and prototype 8 kbar cells for LT – 300 K</i>		
	<b>T1.3</b>		<b>In-situ Pressure Measurement Development</b>		
		A1	<i>Investigation of applicable techniques</i>		
		A2	<i>Development of techniques and prototypes</i>		
<b>W2</b>			<b>Levitation Furnaces</b>		
	<b>T2.1</b>		<b>Aerodynamic levitation furnace</b>		
		A1	<i>Furnace design: lasers, nozzle, neutron access &amp; gas handling</i>		
		A2	<i>Nozzle Design study</i>		
		A3	<i>Construction and testing</i>		
		A4	<i>Construction and tests of electroless technique</i>		
	<b>T2.2</b>		<b>Electrostatic levitation</b>		
		A1	<i>Evaluation of design principles</i>		
		A2	<i>Evaluation and design of sample position electrostatic systems and laser</i>		
		A3	<i>Mechanical Design</i>		
		A4	<i>Evaluation and design of control systems and fabrication</i>		
		A5	<i>System testing</i>		
<b>W3</b>			<b>Gas Adsorption Systems</b>		
	<b>T3.1</b>		<b>Remote control process system, 300 bar/200°C</b>		
		A1	<i>Adsorption isotherm sample preparation at low pressures</i>		
		A2	<i>Gas handling with dynamic gas flow option 300bar up to 500K</i>		
	<b>T3.2</b>		<b>Gravimetric measurement system, 300 bar/20-500 K</b>		
		A1	<i>Magnetic suspension balance for neutron environments</i>		
		A2	<i>Addition of vapour mixing option pressure &lt;35bar temperature &lt;400K</i>		
		A3	<i>Extension of temperature range 20-700K for low pressures</i>		
	<b>T3.3</b>		<b>Cells for reflectivity measurements</b>		
		A1	<i>Design and fabricate cell with controlled humidity (10 – 80°C, p &lt; 3 bar)</i>		
		A2	<i>Design and fabrication of a cell: gravimetric measurement, 3 bars &amp; 70-300</i>		

