2014-15



FSE X-Ray Analytical Equipment Monthly Monitoring

Procedure to be Followed

- 1.1 Switch each piece of equipment on and set to normal operating settings. Measure background level. At a distance of 3 m from each device check the background level using radiation monitor. Note this count rate in the log-book.
- 1.2 Visually inspect each enclosure for signs of mechanical damage. Record result of visual check in log-book.
- 1.3 Switch each device to the maximum <u>normal</u> settings (kV and mA) and place a test object in the sample chamber. Record the count rate reading around each device.
- 1.4 Check that warning lights (if present on a device) are working
- 1.5 Test any interlocked doors and emergency stop buttons. Testing should be carried out by opening a door and attempting to activate the X-rays or activating the emergency stop and trying to activate the X-rays.

For further information consult the local rules for ionising radiation

* Nor yet operational

Radiation Monitor Serial Number: 032051

November 2014	Bruker D8 Advance ECO XRD	XPS System	Panalytical Minipal 4 X-ray Fluorescence Spectrometer	Phillips CM20 🚜 Transmission Electron Microscope	Leo Carl Zeiss) 1455VP Scanning Electron Microscope
1.1 Background Level (counts/sec)	2	2	2	NA	2
1.2 Visual Inspection				N/A	<u></u>
1.3 Count rate at normal operation (counts/sec)	2	2	2	NA	2
1.4 Warning lights working (Y/N)	Y	7	7	NA	7
1.5 Interlocks/emergency stops working (Y/N)	7	7	7	NA	7
J. Mchouser	U	J-W-	do	- 18/11	(14
December 2014	Bruker D8 Advance ECO XRD	XPS System	Panalytical Minipal 4 X-ray Fluorescence Spectrometer	Phillips CM20 Transmission Electron Microscope	Leo Carl Zeiss) 1455VP Scanning Electron Microscope
1.1 Background Level (counts/sec)	2	2	2	MA	2
1.2 Visual Inspection		w		èę	
1.3 Count rate at normal operation (counts/sec)	2	2	2	ι,	2
1.4 Warning lights working(Y/N)	7	4	4	ε,	4
1.5 Interlocks/emergency stops working (Y/N)	7		Y	, t •	
16/12/14					
January 2015	Bruker D8 Advance ECO XRD	XPS System	Panalytical Minipal 4 X-ray Fluorescence Spectrometer	Phillips CM20 Transmission Electron Microscope	Leo Carl Zeiss) 1455VP Scanning Electron Microscope
1.1 Background Level (counts/sec)	2		2		2
1.3 Visual Inspection					
1.3 Count rate at normal operation (counts/sec)	2		2		2

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	1.4 Warning lights working(Y/N)	7		7		Y
	1.5 Interlocks/emergency stops working (Y/N)	4		\ \frac{1}{2}		
	Twald	-				
	30/1/15					
		Bruker	XPS	Danahetical	Dhilling CN420	Los Carl Zaiga
	February 2015			Panalytical	Phillips CM20	Leo Carl Zeiss)
		D8	System	Minipal 4 X-ray	Transmission	1455VP Scanning
26	41410	Advance		Fluorescence	Electron	Electron
	\$ L	ECO XRD		Spectrometer	Microscope	Microscope
	1.1 Background Level	Jan 1997	-7	X-VE	·	
	(counts/sec)		- 7	LCAPS	Andrew Constitution of the	
	1.4 Visual Inspection	<u>L</u>	Commence of the second	(Ex. 15)		.
	1.3 Count rate at		<u> </u>			
·	normal operation (counts/sec)	7	2			2
·	1.4 Warning lights working(Y/N)	7	4			
	1.5					
	Interlocks/emergency	-/		Sammer Commencer .	· ·	
	stops working (Y/N)	/			an and a second	
	27/2/15	** Characteristic property		-		
	4774					
	n	Dankon	VDC	Danalutical	Dhilling CMANO	L C 1 7 - ! 1
	March 2015	Bruker	XPS	Panalytical	Phillips CM20	Leo Carl Zeiss)
	March 2015 243/15	D8	XPS System	Minipal 4 X-ray	Transmission	1455VP Scanning
	24/3/15	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	24/3/15 J.mclda	D8		Minipal 4 X-ray	Transmission	1455VP Scanning
	24/3/15 J. mcl d ===================================	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	24/3/15 J. McJ d 22 1.1 Background Level (counts/sec)	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	24/3/15 J. mcl d ===================================	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	24/3/15 J. McJ d 22 1.1 Background Level (counts/sec)	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	24/3/15 J. McJ d 22 1.1 Background Level (counts/sec)	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N)	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
The second secon	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
The second secon	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
	1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron

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April 2015 24 4/15	Bruker D8 Advance ECO XRD	XPS System	Panalytical Minipal 4 X-ray Fluorescence Spectrometer	Phillips CM20 Transmission Electron Microscope	Leo Carl Zeiss) 1455VP Scanning Electron Microscope
1.1 Background Level (counts/sec)	2	2			12
1.6 Visual Inspection	V				
1.3 Count rate at normal operation (counts/sec)	2	2			2
1.4 Warning lights working(Y/N)	7	7			Y
1.5 Interlocks/emergency stops working (Y/N)	7	1			7
Indada					
May 2015 27 5 15	Bruker D8 Advance ECO XRD	XPS System	Panalytical Minipal 4 X-ray Fluorescence Spectrometer	Phillips CM20 Transmission Electron Microscope	Leo Carl Zeiss) 1455VP Scanning Electron Microscope
1.1 Background Level (counts/sec)	2				2
1.7 Visual Inspection	~				
1.3 Count rate at normal operation (counts/sec)	2				2
1.4 Warning lights working(Y/N)	7				7
1.5 Interlocks/emergency stops working (Y/N)	7				7
		·			
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June 2015 30/6/15	Bruker D8 Advance	XPS System	Panalytical Minipal 4 X-ray Fluorescence	Phillips CM20 Transmission Electron	Leo Carl Zeiss) 1455VP Scanning Electron
30/0/10	ECO XRD		Spectrometer	Microscope	Microscope
1.1 Background Level (counts/sec)	2			2	7
1.2 Visual Inspection					
1.3 Count rate at normal operation (counts/sec)	2			2	2
1.4 Warning lights working (Y/N)	7				Y
1.5 Interlocks/emergency stops working (Y/N)	7				<u> </u>
July 2015 24/7/15	Bruker D8 Advance ECO XRD	XPS System	Panalytical Minipal 4 X-ray Fluorescence Spectrometer	Phillips CM20 Transmission Electron Microscope	Leo Carl Zeiss) 1455VP Scanning Electron Microscope
1.1 Background Level (counts/sec)	2			2	7
1.2 Visual Inspection	-		part of the second seco		
1.3 Count rate at normal operation (counts/sec)	2			2	2.
1.4 Warning lights working(Y/N)	7.				7
1.5 Interlocks/emergency stops working (Y/N)	7	/			7
August 2015	Bruker D8 Advance ECO XRD	XPS System	Panalytical Minipal 4 X-ray Fluorescence Spectrometer	Phillips CM20 Transmission Electron Microscope	Leo Carl Zeiss) 1455VP Scanning Electron Microscope
1.1 Background Level (counts/sec)					
1.3 Visual Inspection					
1.3 Count rate at normal operation (counts/sec)	-				

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1.4 Warning lights				•	
working(Y/N)					
1.5					
Interlocks/emergency					
stops working (Y/N)	.*		,		
	Dl.	VDC	B 1 1		
September 2015	Bruker	XPS	Panalytical	Phillips CM20	Leo Carl Zeiss)
	D8	System	Minipal 4 X-ray	Transmission	1455VP Scanning
n(a is)	Advance		Fluorescence	Electron	Electron
	ECO XRD		Spectrometer	Microscope	Microscope
1.1 Background Level	. ~				
(counts/sec)	2	-	The same of the sa	1	7
1.4 Visual Inspection			, , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,	<u> </u>
			· · · · · · · · · · · · · · · · · · ·		
1.3 Count rate at				 	
	7	particular and a second	- Approximation		
normal operation	1.6	, market		,	.7_
(counts/sec)				4	
1.4 Warning lights			· · · · · · · · · · · · · · · · · · ·	American and a second a second and a second	
working(Y/N)			· · · · · · · · · · · · · · · · · · ·	pir .	1
1.5					
Interlocks/emergency				- American	
stops working (Y/N)					
Stops Working (1714)	<u> </u>				
				'	
October 2015	Bruker	XPS	D	DI:11: 01400	
Detender July	LBIUKEE	I XPS		3 Unilling (N/D/)	
October 2013	Į.		Panalytical	Phillips CM20	Leo Carl Zeiss)
	D8	System	Minipal 4 X-ray	Transmission	1455VP Scanning
	D8 Advance		Minipal 4 X-ray Fluorescence	1	
28/10/15	D8		Minipal 4 X-ray	Transmission	1455VP Scanning
	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level	D8 Advance		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec)	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec)	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec)	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron
1.1 Background Level (counts/sec) 1.5 Visual Inspection 1.3 Count rate at normal operation (counts/sec) 1.4 Warning lights working(Y/N) 1.5 Interlocks/emergency	D8 Advance ECO XRD		Minipal 4 X-ray Fluorescence	Transmission Electron	1455VP Scanning Electron

J. Melda

November 2015	Bruker D8 Advance ECO XRD	XPS System	Panalytical Minipal 4 X-ray Fluorescence Spectrometer	Phillips CM20 Transmission Electron Microscope	Leo Carl Zeiss) 1455VP Scanning Electron Microscope
1.1 Background Level (counts/sec)	2	2		2	2
1.6 Visual Inspection)		<u></u>	
1.3 Count rate at normal operation (counts/sec)	2	2		2	2
1.4 Warning lights working(Y/N)				V	
1.5 Interlocks/emergency stops working (Y/N)					
	10/11/15 J.M.	6/11/15	Colulis	6/11/15	10/11/15
December 2015	Bruker D8 Advance ECO XRD	XPS System	Panalytical Minipal 4 X-ray Fluorescence Spectrometer	Phillips CM20 Transmission Electron Microscope	Leo Carl Zeiss) 1455VP Scanning Electron Microscope
1.1 Background Level (counts/sec)	7		· ·	2	
1.7 Visual Inspection	· ·	·			
1.3 Count rate at normal operation (counts/sec)	7	<i></i>		Z	
1.4 Warning lights working(Y/N)			· juminimum ·	-	
1.5 Interlocks/emergency stops working (Y/N)					
	21/12/15	de			

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