



Maximizing Scientific Output through Data FAIRness

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SIMS team (Scientific Information Management Systems)

ESS

Interesting Solutions



IN10 Logsheet form Team: P. Cook, T. Arnold, L. Burgess, T. Searle Monochromator: Si 111 imp. Sample environment: computer temperature

Date	Sample	Run number from	Run number to	App.	Run time	Test (K)	Trap (K)	Team (K)	Doppler f(Hz) or Mono temp.	Monitor flux (nA)	Comments
22/3/07	pure MgO	22876			300	40			connected	2.30	207E in 24mm cryofurnace with wide open no heavy peaks identified
22/3/07	Vanadyl oxalate	22876			11	40				2.20	207E in 24mm cryofurnace with 19.0% for 100mm 0.2mm slit for layout station in 270mm cryofurnace
1/1	pure MgO	22877			4					2.20	with 207D in 270mm cryofurnace
1/1	Vanadyl oxalate	22878			4						207E in 48mm cryofurnace
4/3/07	Vanadyl oxalate in MgO	22879			4						with 207D in 270mm cryofurnace
1/1	Vanadyl oxalate in MgO	22880			4						with 207E in 48mm cryofurnace
1/1		22882									beam received
1/1	Vanadyl oxalate	22883			4						with 207D in 270mm cryofurnace
1/1		22884			4						with 207D in 270mm cryofurnace
26/3/07	2 more Vanadyl	22886								2.30	207E in 48mm cryofurnace
1/1		22887									stopped
1/1	pure MgO	22888									207C in 48mm cryofurnace
1/1	Vanadyl oxalate	22889									207E in 48mm cryofurnace
1/1	Vanadyl oxalate	22890									207D in 48mm cryofurnace
1/1		22891									207C in 48mm cryofurnace
1/1	Vanadyl oxalate	22892									207C in 48mm cryofurnace

note: partly wrong run times in data files; refer to logbook and these logsheets.

reactor cycle: 2007-7 experiment: 7-05-2803 page 1 of 2



logbook(1).xlsx (Read-Only)

Run number	Sample	Head destination	Head type	Comments
8	41794 41799 DIO	h	g	5.5
9	41796 41797 DIO	h	g	10.0
10	41798 41799 DIO	h	g	25
11	41800 41801 DIO	h	g	5.5
12	41802 41803 DIO	h	g	10.0
13	41804 41805 DIO	h	g	25
14	41806 41807 DIO	h	g	5.5
15	41808 41809 DIO	h	g	10.0
16	41810 41811 DIO	h	g	25
17	41812 41813 DIO	h	g	5.5
18	41814 41815 ACW	g	g	10.0
19	41816 41817 ACW	g	g	25
20	41818 41819 ACW	g	g	5.5
21	41820 41821 ACW	g	g	10.0
22	41822 41823 ACW	g	g	25
23	41824 41825 ACW	g	g	5.5
24	41826 41827 ACW	g	g	10.0
25	41828 41829 ACW	g	g	25
26	41830 41831 ACW	g	g	5.5
27	41832 41833 ACW	g	g	10.0
28	41834 41835 ACW	g	g	25
29	41836 41837 ACW	g	g	5.5
30	41838 41839 DIO	h	g	10.0
31	41840 41841 DIO	h	g	25
32	41842 41843 DIO	h	g	5.5
33	41844 41845 DIO	h	g	10.0
34	41846 41847 DIO	h	g	25
35	41848 41849 DIO	h	g	5.5
36	41850 41851 ACW	g	g	10.0
37	41852 41853 ACW	g	g	25
38	41854 41855 ACW	g	g	5.5
39	41856 41857 ACW	g	g	10.0
40	41858 41859 ACW	g	g	25
41	41860 41861 ACW	g	g	5.5
42	41862 41863 ACW	g	g	10.0
43	41864 41865 ACW	g	g	25
44	41866 41867 ACW	g	g	5.5
45	41868 41869 DIO	h	g	10.0
46	41870 41871 DIO	h	g	25
47	41872 41873 DIO	h	g	5.5
48	41874 41875 DIO	h	g	10.0
49	41876 41877 DIO	h	g	25
50	41878 41879 ACW	g	g	5.5
51	41880 41881 ACW	g	g	10.0
52	41882 41883 ACW	g	g	25
53	41884 41885 ACW	g	g	5.5
54	41886 41887 ACW	g	g	10.0
55	41888 41889 ACW	g	g	25
56	41890 41891 ACW	g	g	5.5
57	41892 41893 ACW	g	g	10.0
58	41894 41895 ACW	g	g	25
59	41896 41897 ACW	g	g	5.5
60	41898 41899 ACW	g	g	10.0
61	41900 41901 ACW	g	g	25
62	41902 41903 ACW	g	g	5.5
63	41904 41905 ACW	g	g	10.0
64	41906 41907 ACW	g	g	25
65	41908 41909 ACW	g	g	5.5
66	41910 41911 ACW	g	g	10.0
67	41912 41913 ACW	g	g	25
68	41914 41915 ACW	g	g	5.5
69	41916 41917 ACW	g	g	10.0
70	41918 41919 ACW	g	g	25
71	41920 41921 ACW	g	g	5.5
72	41922 41923 ACW	g	g	10.0
73	41924 41925 ACW	g	g	25
74	41926 41927 ACW	g	g	5.5
75	41928 41929 ACW	g	g	10.0
76	41930 41931 ACW	g	g	25
77	41932 41933 ACW	g	g	5.5
78	41934 41935 ACW	g	g	10.0
79	41936 41937 ACW	g	g	25
80	41938 41939 ACW	g	g	5.5
81	41940 41941 ACW	g	g	10.0
82	41942 41943 ACW	g	g	25
83	41944 41945 ACW	g	g	5.5
84	41946 41947 ACW	g	g	10.0
85	41948 41949 ACW	g	g	25
86	41950 41951 ACW	g	g	5.5
87	41952 41953 ACW	g	g	10.0
88	41954 41955 ACW	g	g	25
89	41956 41957 ACW	g	g	5.5
90	41958 41959 ACW	g	g	10.0
91	41960 41961 ACW	g	g	25
92	41962 41963 ACW	g	g	5.5
93	41964 41965 ACW	g	g	10.0
94	41966 41967 ACW	g	g	25
95	41968 41969 ACW	g	g	5.5
96	41970 41971 ACW	g	g	10.0
97	41972 41973 ACW	g	g	25
98	41974 41975 ACW	g	g	5.5
99	41976 41977 ACW	g	g	10.0
100	41978 41979 ACW	g	g	25

logbook(2).pdf

$C_{50}O_{10}CO_{20}H_{2}$
 mass of graphite = 12.24g
 no. of moles for 1 monolayer = $\frac{Mg \times a_0}{a_{surface} \times M_n \text{ molecule}}$

$$\text{area per molecule} = \frac{(1.4) \times 5.24 \text{ \AA}^2}{10 \times 5.24} = 52.4 \text{ \AA}^2$$

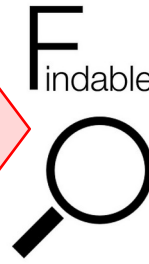
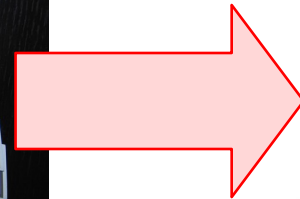
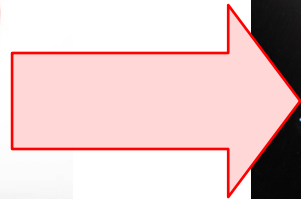
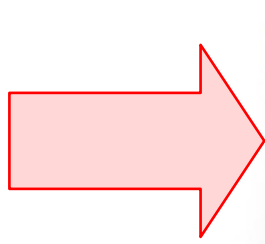
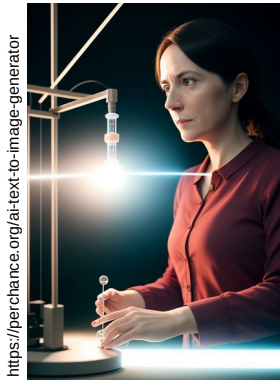
$$\text{mols for 1 mono} = \frac{12.24 \times 29.9}{52.4 \times 10^{18} \times 6.02 \times 10^{23}} = 1.16 \times 10^{-23} \text{ mols}$$

$$R_{UM} = 126$$

 mass for 1 monol = 0.14611g
 0.8 monolayers = 0.11688g
 mass added = 0.1187g
 (of both O)
 Sample under vacuum in stainless steel
 Annealed 110°C

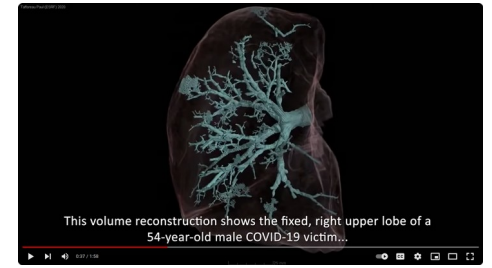


Tools



Data Catalog

Open Data Benefits: Story One



https://www.youtube.com/watch?v=wI_kfKrfDD8

<https://perchance.org/ai-text-to-image-generator>



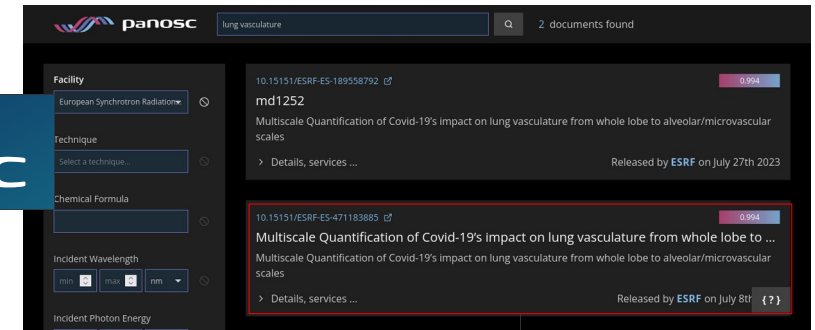
<https://clipart-library.com/clipart/Xyik5xbE.htm>



Covid-19
(whole) lung
vasculature



<https://www.panosc.eu/>



<https://data.panosc.eu/search/?q=lung+vasculature&facility=ESRF>



<https://www.esrf.fr>

Session **Restricted access**

Multiscale Quantification of Covid-19's impact on lung vasculature from whole lobe to alveolar/microvascular scales

Lee, Peter; Marussi, Sebastian; Tafforeau, Paul; Xian, Rui

Multiscale Quantification of Covid-19's impact on lung vasculature from whole lobe to alveolar/microvascular scales

Experimental Data	Experimental Report
The data are under embargo until 2024 but could be released earlier. Currently, they are only accessible to proposal team members. Access data for experimental team	One report has been found for this proposal. 94736_C.pdf

<https://data.esrf.fr/doi/10.15151/ESRF-ES-471183885>

Tafforeau, P., Walsh, C., Wagner, W. L., R. Patrick Xian, Verleden, S. E., Daniyal J. Jafree, Bellier, A., Werlein, C., Kühnel, M. P., Boller, E., Walker-Samuel, S., Robertus, J. L., Long, D. A., Jacob, J., Marussi, S., Emmeline Brown, Holroyd, N., Jonigk, D. D., Ackermann, M., & Lee, P. D. (2021). Complete left lung from the body donor LADAF-2020-27 (Version 1) [dataset]. European Synchrotron Radiation Facility. doi.org/10.15151/ESRF-DC-572196058

Data Collection **Open access**

Complete left lung from the body donor LADAF-2020-27

Paul Tafforeau; Claire Walsh; Willi L. Wagner; R. Patrick Xian; Stijn E. Verleden; Daniyal J. Jafree; Alexandre Bellier; Christopher Werlein; Mark P. Kühnel; Elodie Boller; Simon Walker-Samuel; Jan Lukas Robertus; David A. Long; Joseph Jacob; Sebastian Marussi; Emmeline Brown; Natalie Holroyd; Danny D. Jonigk; Maximilian Ackermann; Peter D. Lee

Complete scan at 25.08um performed by HIP-CT on the beamline BM05 of the left lung from the body donor LADAF-2020-27 using quarter-acquisition protocol.

Experimental Data	Experimental Report
The data can be accessed by clicking on the link below Access data	One report has been found for this proposal. 94736_C.pdf

<https://data.esrf.fr/doi/10.15151/ESRF-DC-572196058>

Open Data Benefits: Story two



Human Organ Atlas EXPLORE SEARCH 3D RECONSTRUCTIONS HELP ← BACK

Complete left lung from the body donor LADAF-2020-27

Description
Complete scan at 25.08um performed by HIP-CT on the beamline BM05 of the left lung from the body donor LADAF-2020-27 using quarter-acquisition protocol.

DOI [10.15151/ESRF-DC-572196058](https://doi.org/10.15151/ESRF-DC-572196058)

Users
Paul Tafforeau, Claire Walsh, Willi L. Wagner, R. Patrick Xian, Stijn E. Verleden, Daniyal J. Jafree, Alexandre Bellier, Christopher Werleine, Mark P. Kühnel, Elodie Boller, Simon Walker-Samuels, Jan Lukas Robertus, David A. Long, Joseph Jacob, Sebastian Marussi, Emmeline Brown, Natalie Holroyd, Danny D. Jonigk, Maximilian Ackermann, Peter D. Lee

Technique
Hierarchical Phase-Contrast Tomography

Instrument
BM05, ESRF

Download files with Globus

- ZIP 25.08um_LADAF-2020-27_lung-left_pag-0.11_0.25_jp2_... 62.4 GB
- ZIP 50.16um_LADAF-2020-27_lung-left_pag-0.11_0.25_jp2_... 7.8 GB
- ZIP 100.32um_LADAF-2020-27_lung-left_pag-0.11_0.25_jp2_... 974.8 MB
- ZIP 200.64um_LADAF-2020-27_lung-left_pag-0.11_0.25_jp2_... 121.7 MB
- JPG pictures/IMG_4814 6.8 MB
- JPG pictures/IMG_4818 6.0 MB

<https://human-organ-atlas.esrf.eu/datasets/572195982>

panosc lung vasculature 2 documents found

Facility
European Synchrotron Radiator

Technique
Select a technique

Chemical Formula

Incident Wavelength

Incident Photon Energy

10.15151/ESRF-ES-189558792 [0.994](#)
md1252
Multiscale Quantification of Covid-19's impact on lung vasculature from whole lobe to alveolar/microvascular scales
> Details, services ... Released by ESRF on July 27th 2023

10.15151/ESRF-ES-471183885 [0.994](#)
Multiscale Quantification of Covid-19's impact on lung vasculature from whole lobe to ...
> Details, services ... Released by ESRF on July 27th 2023

<https://data.panosc.eu/search/?q=lung+vasculature&facility=ESRF>

Article | [Open Access](#) | [Published: 04 November 2021](#)

Imaging intact human organs with local resolution of cellular structures using hierarchical phase-contrast tomography

[C. L. Walsh](#) [P. Tafforeau](#), [Walker-Samuels](#), [J. L. Robertus](#), [Ackermann](#) & [P. D. Lee](#)

Nature Methods **18**, 1532-1540 (2021) | [View Article](#) | [View Abstract](#)

97k Accesses | 61 Citations

<https://doi.org/10.1038/s41592-021-01317-x>

Resolution	Sample	DOI	Energy	Size	Time
25.08 μm	Complete organ	10.15151/ESRF-DC-572196058	~93 keV	145	24
35.35 μm	FSC A&B	10.15151/ESRF-DC-572221247	~88 keV	145	1.3

Data Collection **Open access**

Complete left lung from the body donor LADAF-2020-27

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[94736_C.pdf](#)

<https://data.esrf.fr/doi/10.15151/ESRF-DC-572196058>

- <https://www.nature.com/articles/s41596-023-00804-z>
UK, DE - 2023
- <https://doi.org/10.1016/j.ebiom.2022.104296>
DE, UK, BE, CH, US - 2022
- <https://doi.org/10.1016/j.lanepc.2022.100330>
DE - 2022
- <https://doi.org/10.1164/rccm.202206-1041ST>
US, EU, JP, CL, ... - 2022
- <https://doi.org/10.48550/arXiv.2211.06689>
CN - 2022
- <https://doi.org/10.48550/arXiv.2209.15180>
CN - 2022
- <https://doi.org/10.1101/2022.12.03.518948>
CN - 2022

- Data Preparation
- Disease Analysis
- Data Compression Techniques



Thank you

Questions? Feedback? ...Suggestions?

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