BartelsRausch_Cryosphere_NaCl_2020 Data Repository

Contents

This file lists and explains the data in the repository.

Measurement settings table: Table1.txt

This table lists all data files in chronological order. "SampleTemp" refers to the reading of the PT-1000 at the side of the sample holder. "cellPressure" is the water vapour pressure during the measurements. From this, in presence of ice, the temperature of the ice sample can be calculated which is given in the column "iceTemp". "dT" is the difference, or temperature offset, between sensor's reading and the ice samples temperature. The offset is due to the sensor being mounted away from the cooled spot of the sample were it experiences heating from warmer parts of the sample holder. The off-set is used to calibrate the temperature sensor and the resulting temperature during the experiments is given in the column "temperature". "relHum" is the relative humidity above (supercooled) liquid and "concBrine" is the concentration of a NaCl solution in mol/l in equilibrium with ice at the experimental temperature. "Area" is the integrated PE signal.

Here, we only print the first few rows, the complete data can be found in the text file.

ans =

8×11 table

Row	date	regionName	sampleTemp_dC	cellPressure_mbar	iceTemp_dC	dT	temperature_d
{'PHOENIX0190190.ibw' }	05-Apr-2016 01:47:41	{'Na1s_2200'}	-9.9898	1.8165	-13.998	-4.0087	-13.998
{'PHOENIX0190190_1.ibw' }	05-Apr-2016 01:47:41	{'Au4f' }	-9.9898	1.8165	-13.998	-4.0087	-13.998
{'PHOENIX0190190_2.ibw' }	05-Apr-2016 01:47:41	{'O1s_2200' }	-9.9898	1.8165	-13.998	-4.0087	-13.998
{'PHOENIX0190190_3.ibw' }	05-Apr-2016 01:47:41	{'Cl2p_2200'}	-9.9898	1.8165	-13.998	-4.0087	-13.998
{'PHOENIX0190190_4.ibw' }	05-Apr-2016 01:47:41	{'C1s_2200' }	-9.9898	1.8165	-13.998	-4.0087	-13.998
{'PHOENIX04042016_004.h5'}	05-Apr-2016 02:16:29	{'NEXAFS' }	-9.9958	1.8166	-13.998	-4.0021	-13.998
{'PHOENIX0191191.ibw' }	05-Apr-2016 02:37:33	{'Na1s_2200'}	-9.9958	1.8183	-13.988	-3.9919	-13.988
{'PHOENIX0191191_1.ibw' }	05-Apr-2016 02:37:33	{'Au4f' }	-9.9958	1.8183	-13.988	-3.9919	-13.988

NEXAFS samples: Table2.txt

This table lists all NEXAFS data files in chronological order with PE carbon to oxygen signal intensity ratios -from which the atomic ratio were calculated in the paper - before ("preCtoO") and after ("postCtoO") each NEXAFS measurement. Also listed is the change in Na ("lossSodi"), O ("lossOxy"), Cl ("lossChlor"), and C ("lossCarb") signal intensity after the NEXAFS measurement compared to prior to the NEXAFS measurement.

Here, we only print the first few rows, the complete data can be found in the text file.

ans =

8×8 table

Row	date	preCtoO	postCtoO	lossSodi	lossOxy	lossChlor	lossCarb
{'PHOENIX04042016_004.h5'}	05-Apr-2016 02:16:29	0.14845	0.13596	16.731	28.817	38.771	34.807
{'PHOENIX04042016_006.h5'}	05-Apr-2016 04:24:12	0.11623	0.10938	7.5326	-0.50434	6.4213	5.4243
{'PHOENIX04042016_007.h5'}	05-Apr-2016 05:43:35	0.10981	0.10281	-0.60864	-0.077078	-9.1506	6.298
{'PHOENIX04042016_008.h5'}	05-Apr-2016 08:57:48	0.26687	0.16251	11.607	-53.106	42.804	6.7673
{'PHOENIX04042016_015.h5'}	06-Apr-2016 13:49:02	0.26967	0.23213	100	-9.8255	-1.773	5.4631
{'PHOENIX04042016_016.h5'}	06-Apr-2016 16:20:19	0.24627	0.22	17.94	-11.352	4.8969	0.52437
{'PHOENIX04042016_020.h5'}	07-Apr-2016 15:11:09	0.11262	0.10905	-8.799	24.715	13.157	27.102
{'PHOENIX04042016_021.h5'}	07-Apr-2016 18:01:08	0.073356	0.07374	-5.146	-1.7605	0.043316	-2.2936

Figure 1 data: Fig1Data[A-F].txt

Each file holds the x-data in the first and the y-data in the second column. The data is identical to that shown in Figure 1. Here, we only print the first few rows, the complete data can be found in the text files.

Fig1DataA

ans =

8×2 table

Xray_Ekin_eV	Intensity
2860	1.6121
2859	1.5994
2858	1.5952
2857	1.5828
2856	1.5793
2855	1.5626

```
        2854         1.5535
        2853         1.5353
```

Fig1DataB

```
ans =

  8×2 table

    Xray_Ekin_eV    Intensity
    ____________    _________

        2850         1.3236
        2849         1.4077
        2848          1.567
        2847         1.6738
        2846         1.7455
        2845         1.7925
        2844         1.8025
        2843         1.7634
```

Fig1DataC

```
ans =

  8×2 table

    Xray_Ekin_eV    Intensity
    ____________    _________

        2850         1.4471
        2849          1.441
        2848         1.4334
        2847         1.4628
        2846         1.4745
        2845         1.4746
        2844          1.435
        2843         1.4106
```

Fig1DataD

```
ans =

  8×2 table

    Xray_Ekin_eV    Intensity
    ____________    _________

        2920             NaN
        2900             NaN
        2880         0.88719
        2860         0.93687
        2859          0.9691
        2858         0.98862
        2857            1.01
        2856          1.0275
```

Fig1DataE

```
ans =

  8×2 table

    Xray_Ekin_eV    Intensity
    ____________    _________

        2920             NaN
        2900             NaN
        2880          1.0675
        2860          1.1076
        2859          1.1246
        2858           1.139
        2857          1.1513
        2856          1.1697
```

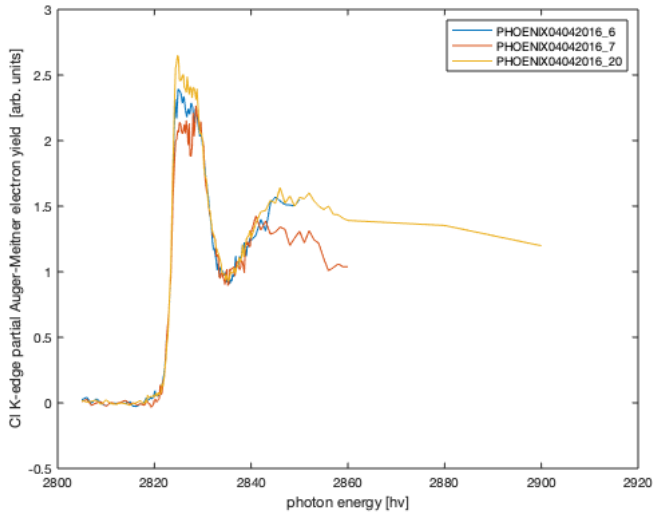
Fig1DataF

```
ans =

  8×2 table

    Xray_Ekin_eV    Intensity
    ____________    _________

        2920            NaN
        2900            NaN
        2880         1.1381
        2860         1.1634
        2859         1.1824
        2858         1.1866
        2857         1.1949
        2856         1.1981
```

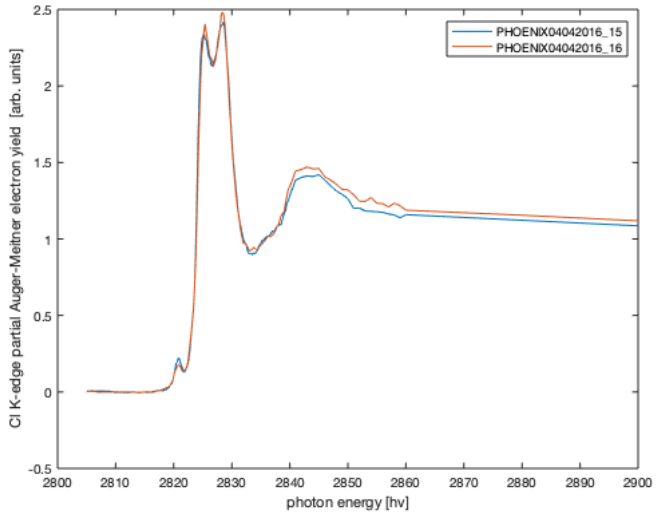
Figure 1 individual data: Fig1Data[C,F]file-name.txt

Here, we give the NEXAFS data to each individual sample the averages of which are shown in Figure 1. Each file holds the x-data in the first and the y-data in second column. The file name refers to the first column in the NEXAFS data list.

Plot individual data from Figure 1C:



Plot individual data from Figure 1F:



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