**Type of experiment**: SEM\_EBSD

**Author(s)**: Jakub Nowak, Muhammad Zubair, James Gibson, Martina Freund, Wassilios Delis, Uzair Rehman

**Comments:**

Metadata template for SEM EBSD experiments.

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*PLEASE DO NOT CHANGE THIS – USE COMENTS TO INCUDE MORE INFO!*

**Legend:**

**Bold** shows the metadata to be included

(brackets) show what type of value is associated, e.g. ‘string’ *“this is a string”*, int *5*, float *3.33*, or fixed set of options *[“red”, “blue”, “green”]*.

*Italic* font shows the example user input

Light blue highlights meta data to be included in a CoScInE mask for new ressources

Light green highlights meta data that is important but is preserved in other files for now and could later be captured automatically (please still include here explicitly!)

Light yellow highlights meta data that may be inserted as part of another experiment (here = “metallographic preparation” or might be better to keep with the imaging records – t.b.d.

Light grey that this meta data is not essential but might be good include (please do include here whatever meta data you can think of for now!

Please define all but the most trivial of acronyms!

You can provide structure to your metadata by including a **[descriptive header]** and then including sub-pieces of metadata tab-indented.

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**Operator** (string)

*Muhammad Zubair*

**Experiment ID** (string)

*EBSD\_T\_3101*

**Specimen ID** (string)

*B2S2\_T*

**[Specimen Information]**

**Parent sample specimen ID**(string)

*S3\_Mg-Ca\_P19*

**Sample location** (string)

*Longitudinal cross-section*

*2 mm from top surface*

**Preparation routine** (string, or maybe drop down of existing data)

*Metallo\_03*

**[Preparation routine]**

**Grit 1** (multiple int)

*800, 1000, 1500*

**Solvent Grit 1** (“isopropanol”, “ethanol”, “water”, “oil”, “water-free lubricant (DP-Struers)”) (single-choice)

*Water*

**Grit 2** (multiple int)

*2500, 4000*

**Solvent Grit 2** (“isopropanol”, “ethanol”, “water”, “oil”, “water-free lubricant (DP-Struers)”) (single-choice)

*isopropanol*

**Grit material** *(“SiC”, “Al2O3”)*

*SiC*

**Polishing Suspensions [µm]** (multiple)

*3, 1, 0.25*

**Material suspension** (“diamond”, *“Al2O3”*)

*Diamond*

**Fine Polishing suspension** (“OPA”, “water-free OPS (Cloeren)”) (multiple-choice)

water-free OPS (Cloeren)

**Solvent Polishing** (“isopropanol”, ethanol”, “water”, “water-free lubricant (DP-Struers)”, “nothing”)(single-choice)

*Nothing*

**Sample storage** (“air”, “desiccator”, “vacuum”, “protective gas – Ar”)

*Desiccator*

**Date of preparation** (date)

16.09.2020

**Etching routine** (string)

etching\_50\_pH11.5

**[Etching routine]**

**Operator**(string)

*Your name*

**Etchant** (string)

50 ml H2O + 1 ml HNO3

**Parameter**

(-20°C, 15V, 60s)

**Corrosion** (“True”, “False”)

True

**[Parameter if Corrosion “True” is chosen]**

**Immersion Experiment ID** (string, or maybe drop down of existing data)

xyz\_11.11.2020

**Instrument used** (string)

*LEO SEM / IMM*

**Detectors used** (“SE”, “BSE”, “In-Lens”,” EBSD”)

EBSD

**[Parameter if Detectors used** “EBSD” **is chosen]**

**This is per ebsd file (to be extracted automatically) from data file itself/meta data where available]**

**Accelerating voltage [kV]** (float)

*20*

**Current [nA]** (float)

*-*

**Magnification** (float)

*75X*

**Step size [µm]** (float)

*1*

**Raster size [µm(width) x µm(height)]** (floats)

*1394 x 994*

**Acquisition mode** (set [“Line scan”, “Zig-zag scan”])

*Line scan*

**No. of points (float)**

1385636

**Working distance (mm)** (float)

*10*

**Tilt angle (°) (float)**

70

**Software used for data analysis (“Flamenco and Channel 5”, “Team and OIM”)**

Channel 5

**[Data Environment as an example of non-standard but useful records]**

**Temperature [°C]** (float)

*25*

**Relative Humidity {%]** (float)

*70*

**Environmental protection during specimen testing** (string)

*Yes*

**Environmental gas** (string)

*Vacuum*

Test date

05-06.10.2020

**Comments** (string)

*EBSD to measure grain orientations and slip line analysis, single phase (Mg) indexing, 5 % global tensile deformation at 170 °C*