

RUHR UNIVERSITÄT BOCHUM





Data Stewardship for Plasma Technology – Low Pressure Plasma Sources

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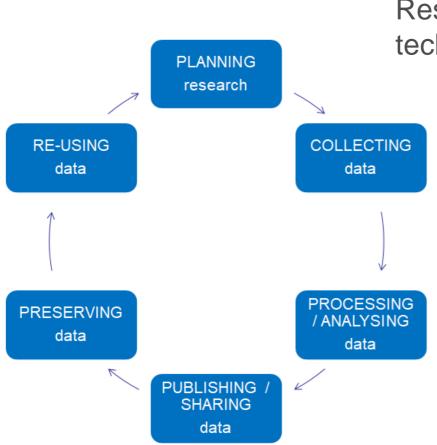
Online meeting, 2022-01-21





Overall aim





Research data management in the field of plasma technology in accordance with the FAIR data principles:

To make data and metadata

Findable

Accessible

Interoperable

Reusable

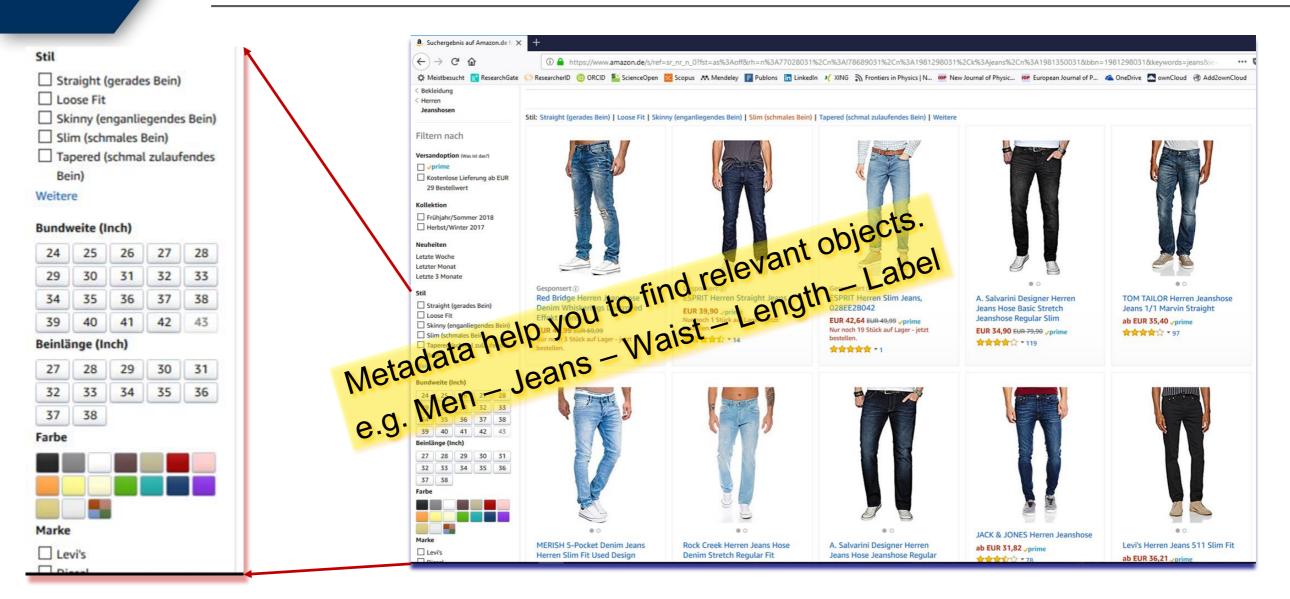
Wilkinson, M., Dumontier, M., Aalbersberg, I. *et al.* The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* **3**, 160018 (2016). https://doi.org/10.1038/sdata.2016.18







Metadata are required to describe, find and re-use data





General concept for metadata in plasma technology





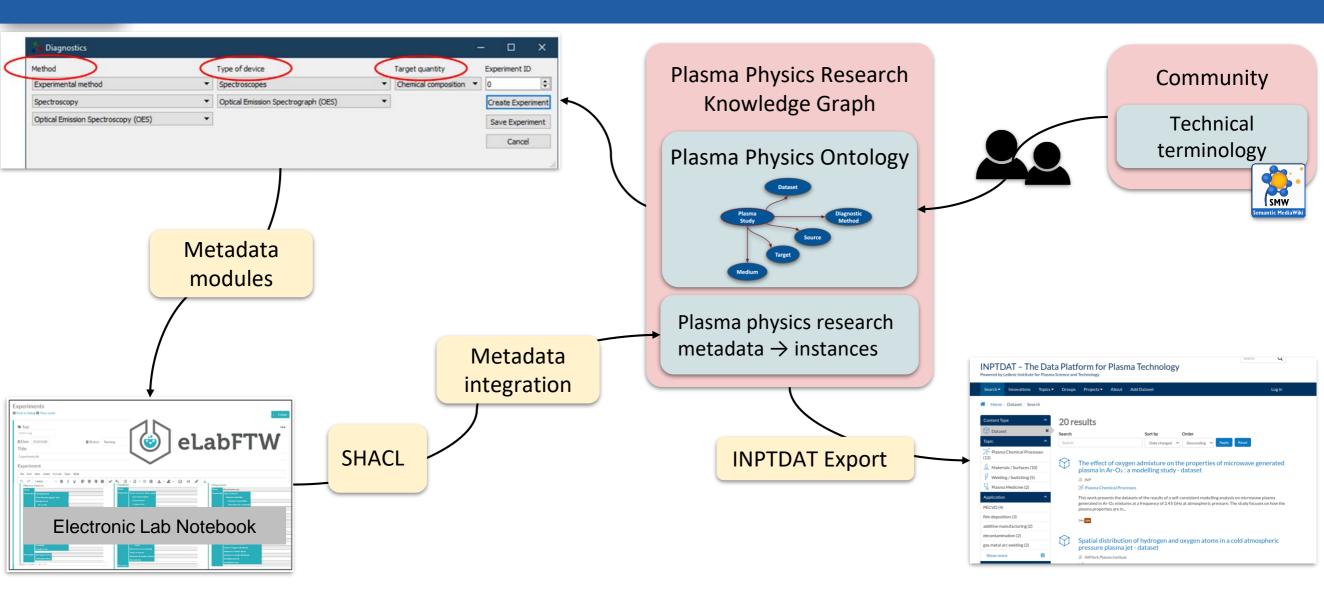
- Plasma
 - o ... is generated by a plasma **source**
 - o ... is operated with/in a **medium**
 - o ... is sometimes used to treat a target
- Diagnostics (experimental and/or computational methods) are used to study the plasma, medium and/or target
- Stored research data (resources) are often useless without information about the whole process
- Specification of the plasma helps to find relevant data sets



Vision: ontology based approach









Result from our last meeting on APPJ





Terminology and metadata fields for atmospheric pressure plasma jets (APPJ)

Example: kINPen MED and COST-Jet

Fact sheet

Key	Title	Description	Туре	Required	Default value kINPen	Default value COST-Jet
name	Name	Name of the plasma source device	string	true	kINPen® MED	COST Reference Microplasma Jet
sn	Serial number	Serial number of the device	string	false		
commerc ial	Commercial product	Is the plasma source commercially available?	boolean	true	true	true
develope dBy	Developer	Name of the institution / group where the plasma source has been developed	string	true	neoplas med GmbH	RUB
describe dBy	Documentation	Publication or other report describing the plasma source	string	false	https://doi.org/10.1007/97 8-3-319-67627-2_32	https://doi.org/10.1088/0 022-3727/49/8/084003
powerMi n	Min. input power [W]	Minimum total input power coupled into the system	number	true	?	?



Planning





- We are here today to
 - find an appropriate description via metadata for low pressure plasmas
 - discuss about necessary entries
- In the next weeks
 - the results from our discussion will be implemented to Github
 - an upload of templates to eLabFTW will be possible

