NanoFASE Data Curation Manual

A Visual Guide to Curating Data

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Acknowledgements

This manual has been produced on behalf of NanoFASE in collaboration between:
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The US Center for the Environmental Implications of NanoTechnology (CEINT), The EU projects NanoFASE and NanoCommons, The Labex SERENADE Project.*

**Please see the text-based Manual for names, funding acknowledgements and official disclaimers*

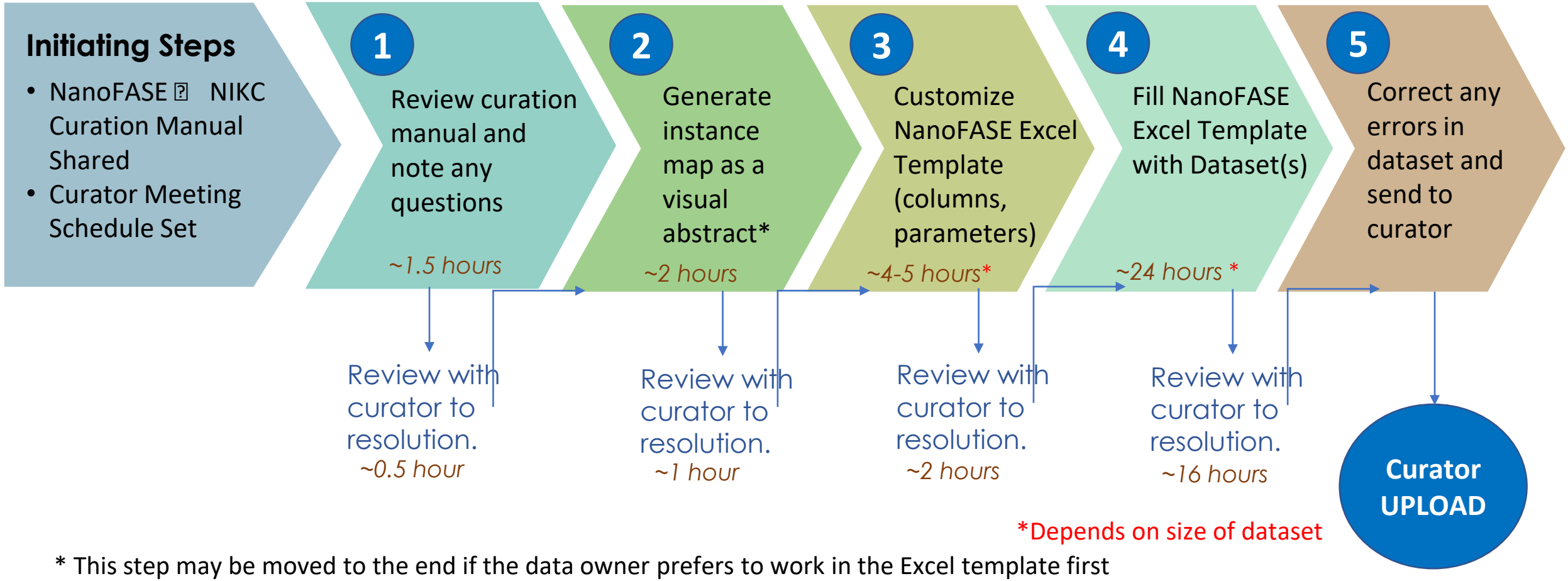
Manual Outline

The information contained in this document provide a visual guide for curating NanoFASE data into the EU version of the NIKC template.

This visual curation manual is broken into three parts:

1. The EU NIKC Excel Template
2. How to create the Instance Map
3. Translating the map to Template

NanoFASE NIKC Curation Process



* This step may be moved to the end if the data owner prefers to work in the Excel template first

Part 1: The EU NIKC Excel Template

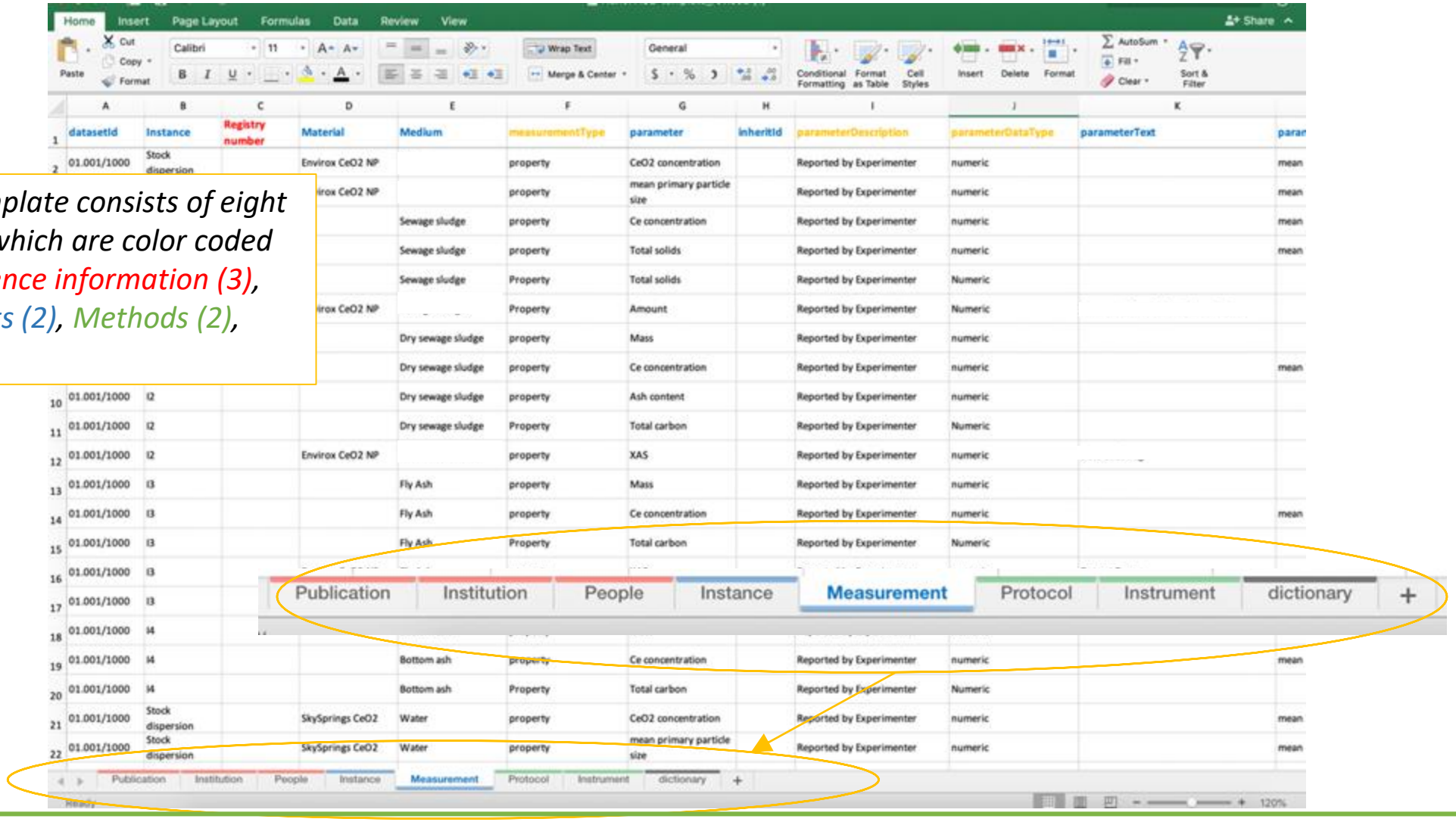
The first section of the visual manual goes through every column of every Excel tab, while also providing information on how the spreadsheets are connected together.

It explains what information should captured where, while providing a list of ‘valid values’ for input into columns.

The goal for curating into the level of depth necessary for the NIKC is to capture all necessary metadata for experiments to be replicable and further analyzed.

Navigating the NanoFASE Curation Process: Curation Excel

The NIKC Excel Template consists of eight spreadsheet tabs, which are color coded by category: Reference information (3), Experimental results (2), Methods (2), Dictionary (1).



Navigating the NanoFASE Curation Process: Reference Tabs

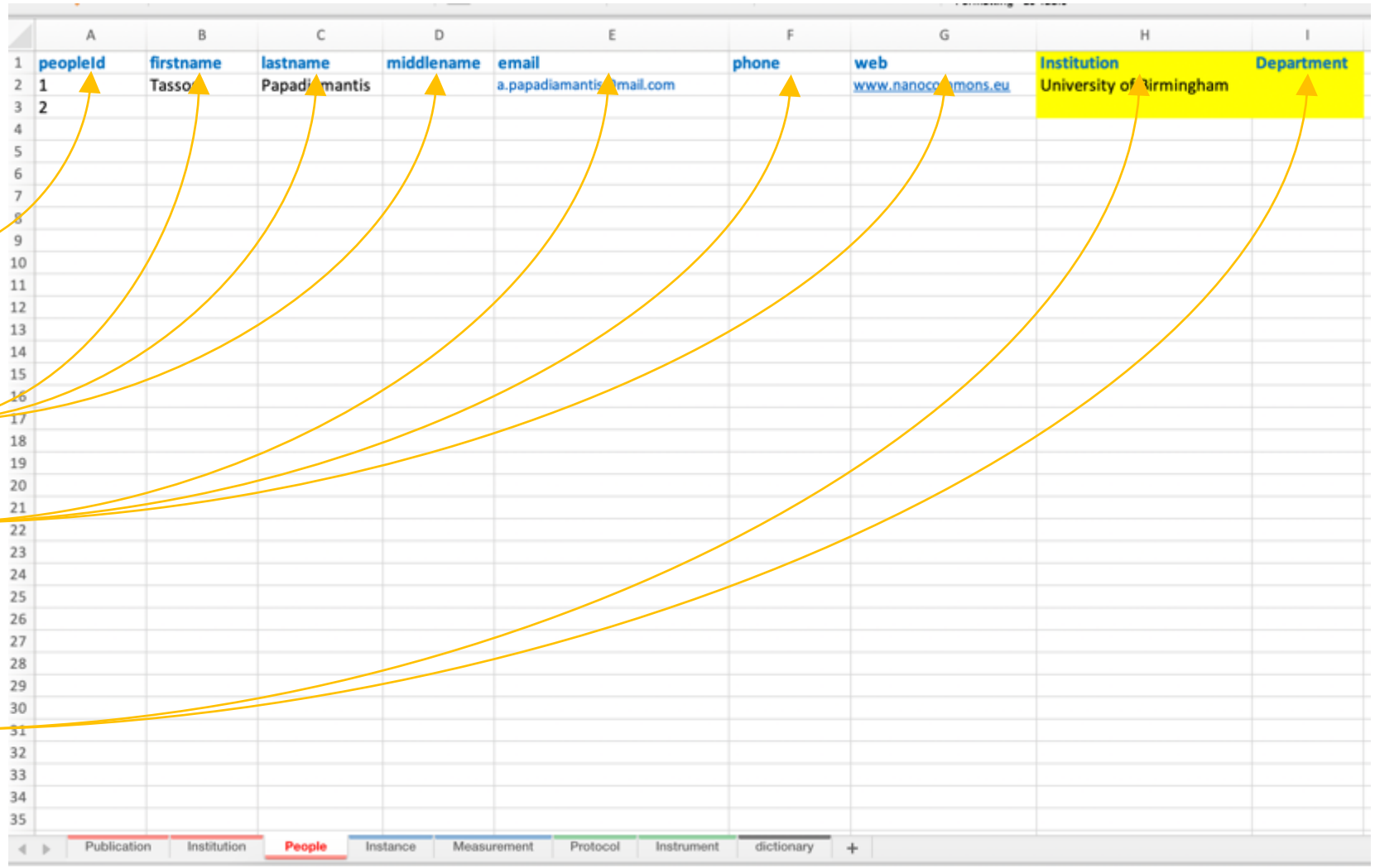
The "People" tab is where we record who worked on the study.

Give each person in the study a unique ID in order 1, 2, 3 etc.. The database will assign truly unique IDs during the upload process.

Input person's name.

Input person's contact information.

*Input the name of the institution. *Include the department on the people tab only if data submitters come from the same institute but different departments*

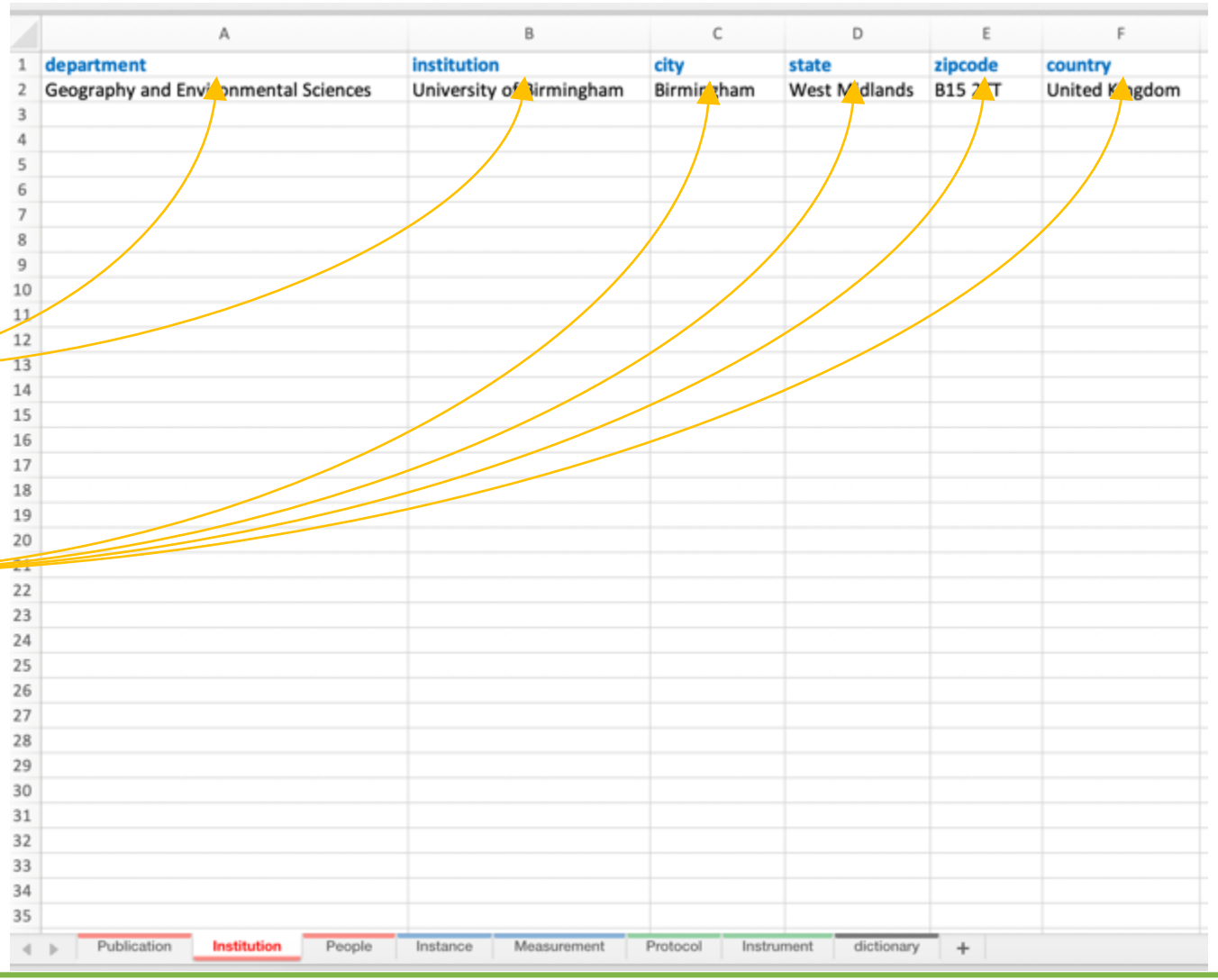


Navigating the NanoFASE Curation Process: Reference Tabs

The "Institution" tab is where we record the study's associated institutions.

Input the name of the institution(s) and the associated department.

Input where the institution(s) is located.



Navigating the NanoFASE Curation Process: Reference Tabs

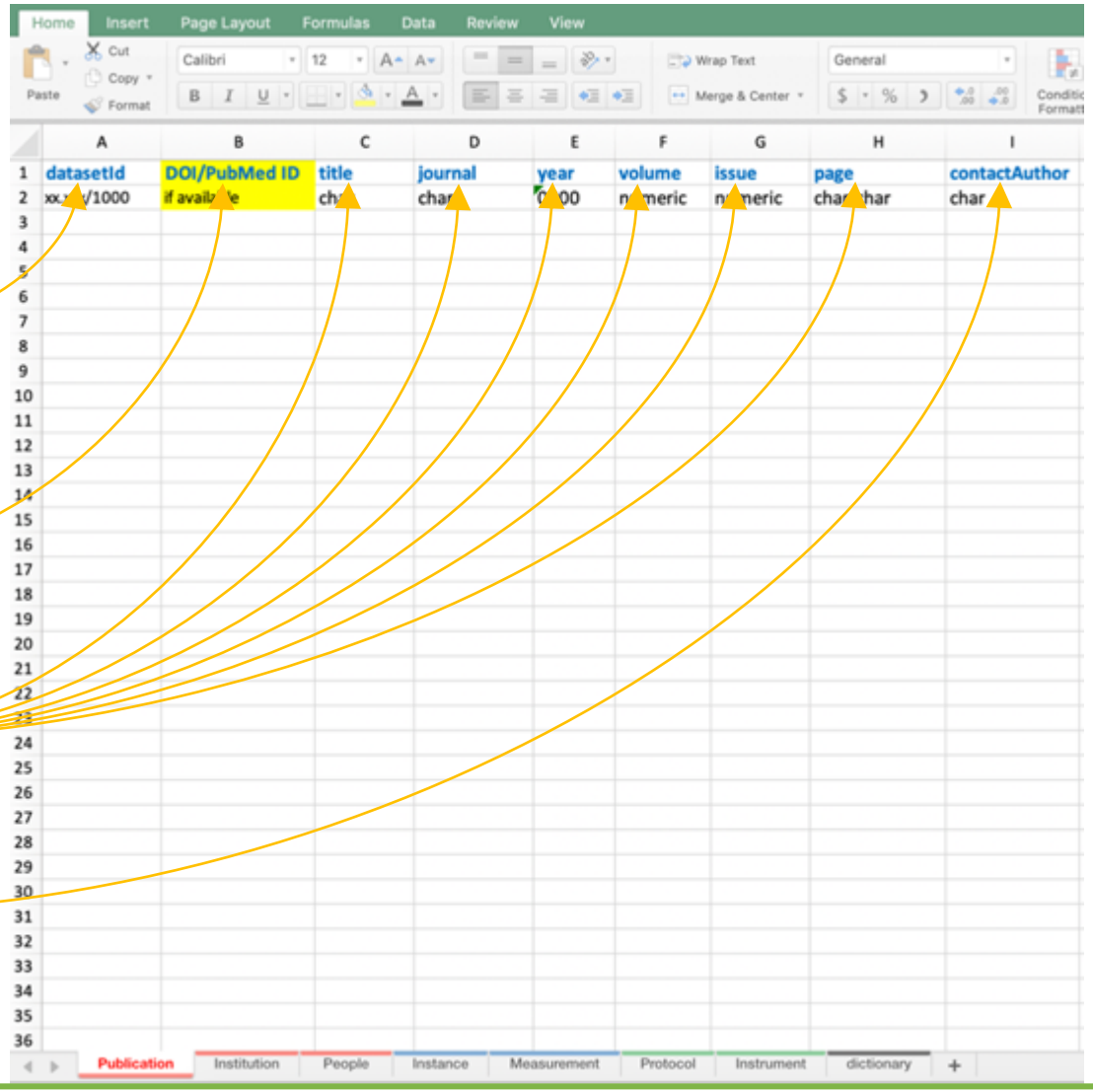
The "Publication" tab is where we record the bibliography information of published studies (Column A – I).

The datasetId will be assigned by the database. Leave blank for now.

Use the DOI of the publication if the dataset has been published.

Input article referencing information.

Input who is listed as the contact author for the publication.



Navigating the NanoFASE Curation Process: Reference Tabs

The "Publication" tab is where we record the bibliography information of published studies (Column J – P).

Input keywords that describe the publication.

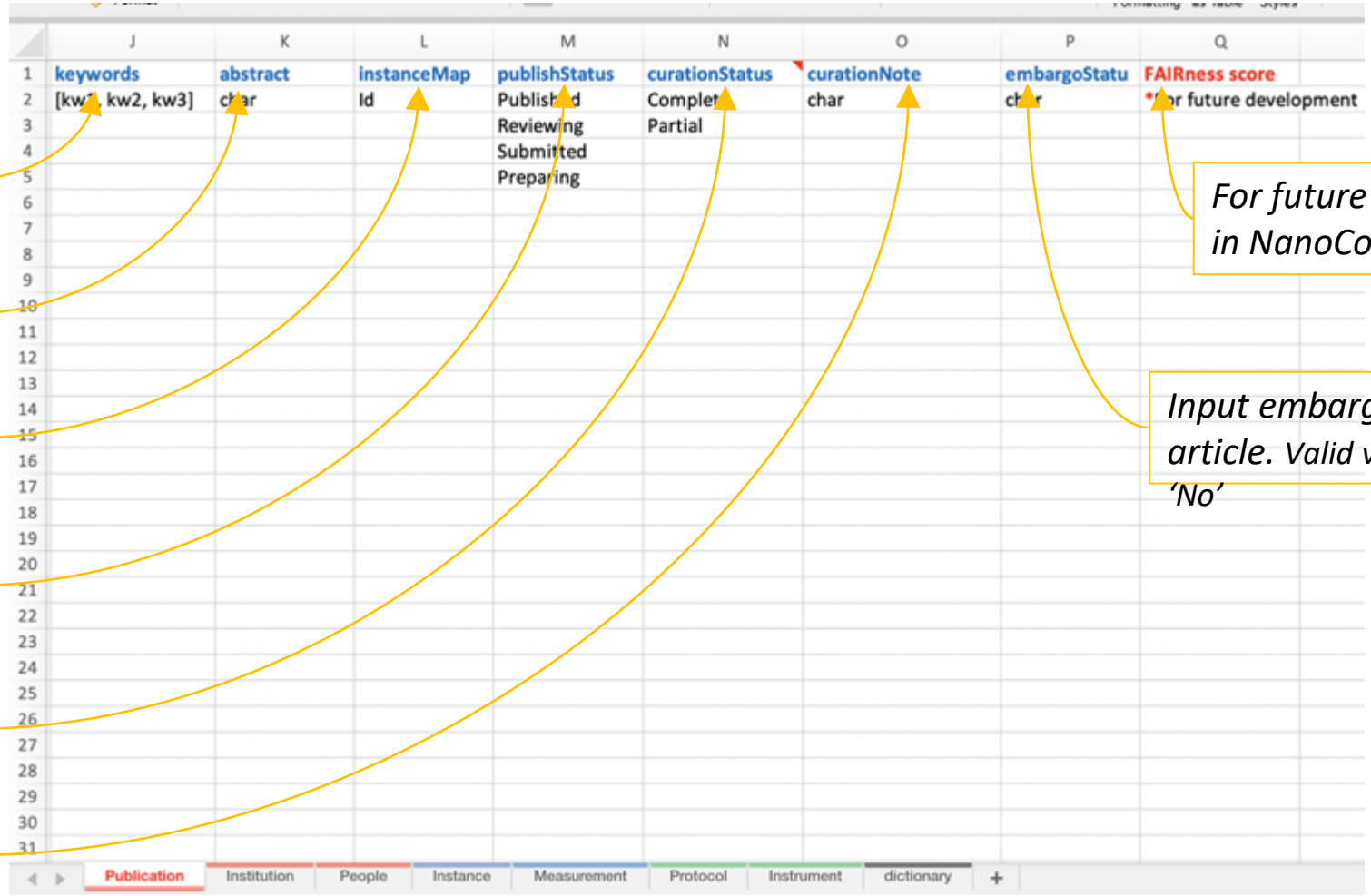
Input the entire abstract from the publication.

The datasetId will be assigned to your Instance Map.

Input publication status of article. Valid values: 'published', 'reviewing', 'submitted', 'preparing'

Input curation status of article. Valid values: 'complete', 'partial'

Input any curation notes. E.g. Not all figures curated.



For future development in NanoCommons.

Input embargo status of article. Valid values: 'Yes', 'No'

Navigating the NanoFASE Curation Process: Method Tabs

The "Protocol" tab is where we record the experimental designs and protocols used to take measurements and endpoints recorded in the study.
(Column A-F)

Give each protocol an unique ID. A number that has not already been assigned to another protocol.

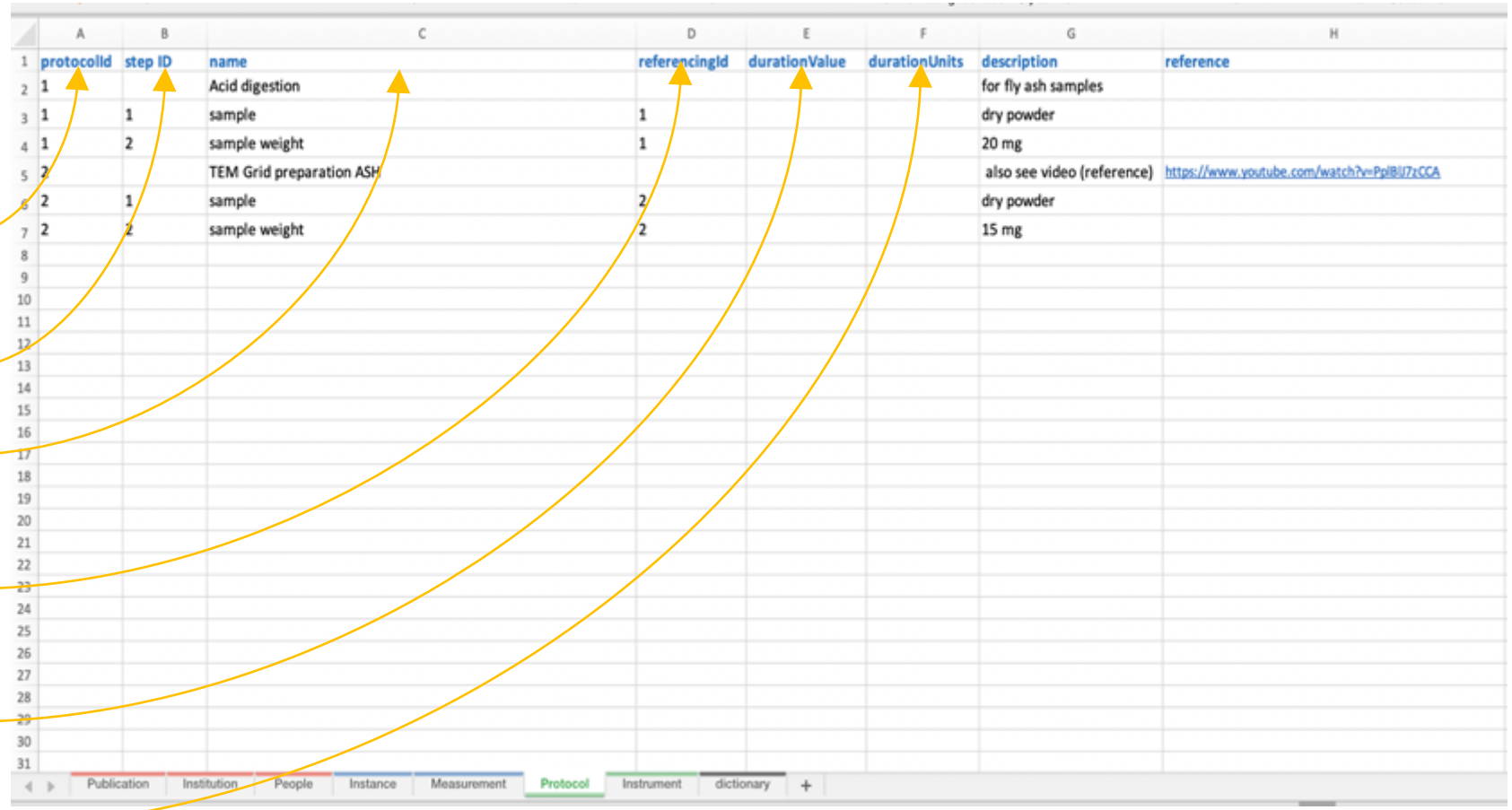
Give each step in a protocol an unique ID.

Input the name of the protocol or step.

For each protocol step, put the "protocolId" of the protocol that the step belongs to.

Input how long the protocol last.

Input time units. Valid values: 'second', 'minute', 'hour', 'day', 'hour', 'week', 'month'



	A	B	C	D	E	F	G	H
1	protocolId	step ID	name	referencingId	durationValue	durationUnits	description	reference
2	1		Acid digestion				for fly ash samples	
3	1	1	sample	1			dry powder	
4	1	2	sample weight	1			20 mg	
5	2		TEM Grid preparation ASH				also see video (reference)	https://www.youtube.com/watch?v=PplBiJ7zCCA
6	2	1	sample	2			dry powder	
7	2	2	sample weight	2			15 mg	

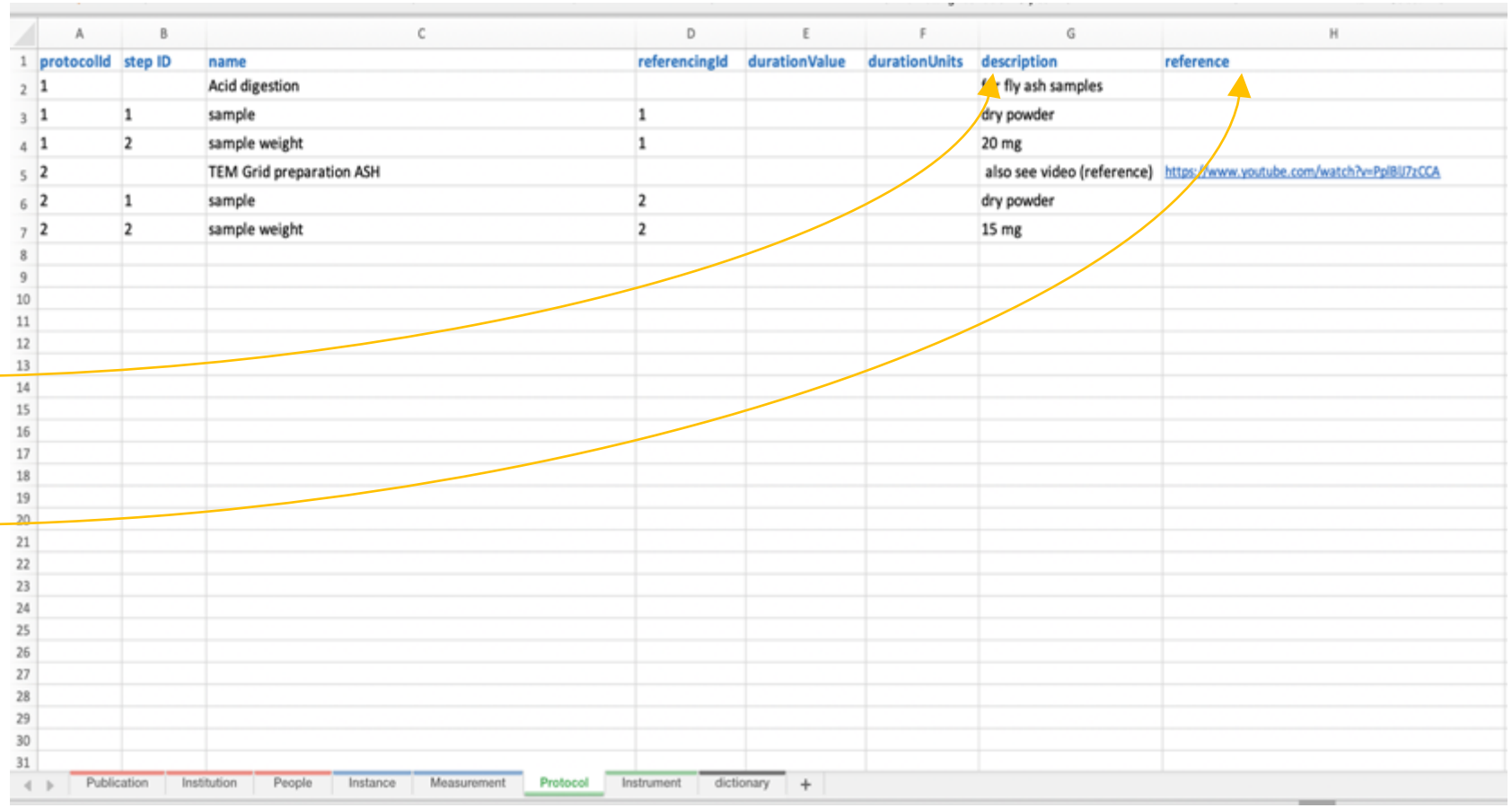
Publication | Institution | People | Instance | Measurement | Protocol | Instrument | dictionary

Navigating the NanoFASE Curation Process: Method Tabs

The "Protocol" tab is where we record the experimental designs and protocols used to take measurements and endpoints recorded in the study.
(Column G-H)

Describe the method or protocol used.

Input any references for the method. Valid values: DOIs, ISBNs, website links



	A	B	C	D	E	F	G	H
1	protocolId	step ID	name	referencingId	durationValue	durationUnits	description	reference
2	1		Acid digestion				for fly ash samples	
3	1	1	sample	1			dry powder	
4	1	2	sample weight	1			20 mg	
5	2		TEM Grid preparation ASH				also see video (reference)	https://www.youtube.com/watch?v=PplBiJ7zCCA
6	2	1	sample	2			dry powder	
7	2	2	sample weight	2			15 mg	

Publication | Institution | People | Instance | Measurement | Protocol | Instrument | dictionary | +

Navigating the NanoFASE Curation Process: Method Tabs

The "Instrument" tab is where we record the instruments used to take measurements and endpoints recorded in the study.

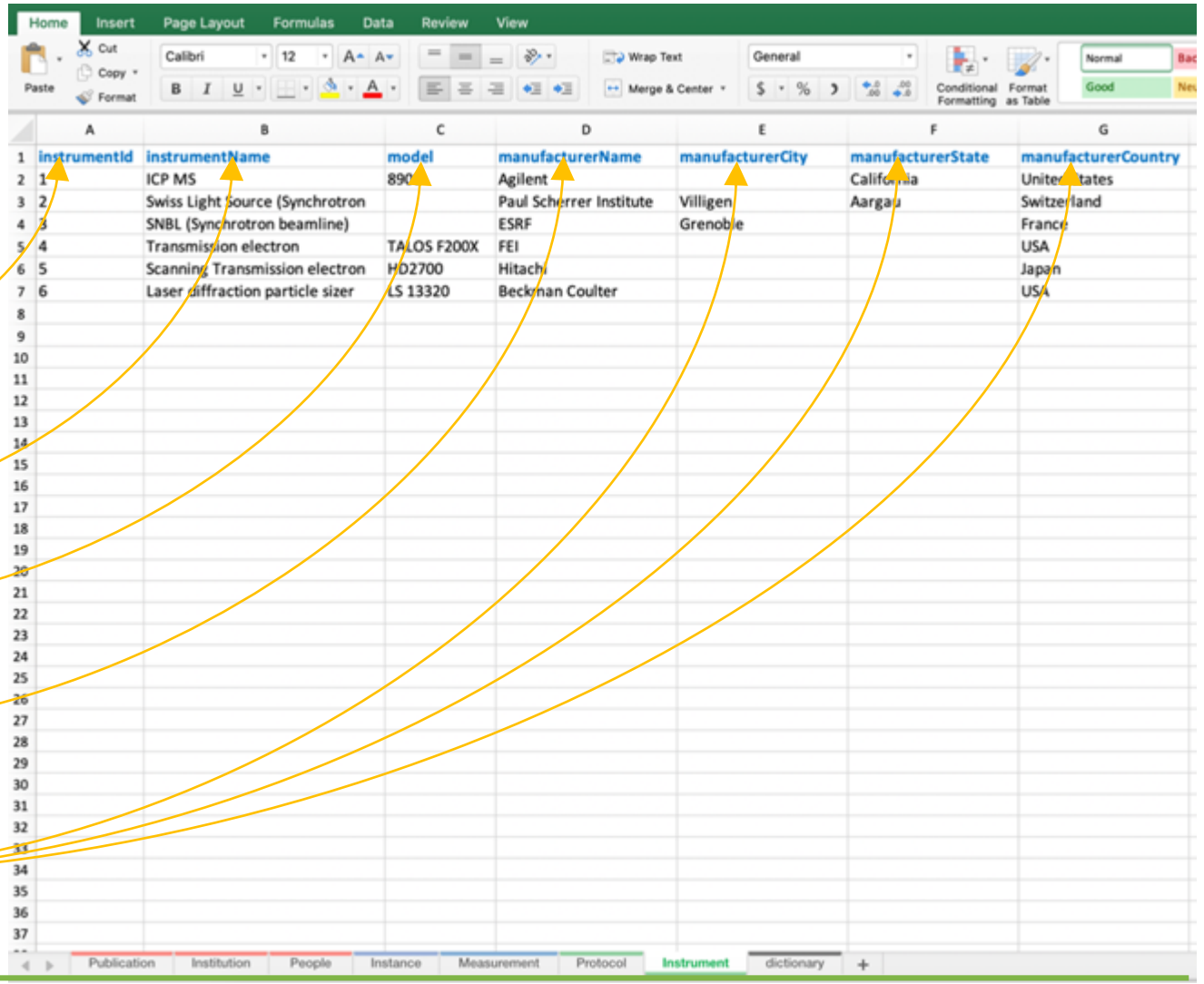
Give each instrument an unique ID. A number that has not already been assigned to another instrument.

Input the name of the instrument.

Input the model of the instrument.

Input the name of instrument's manufacturer.

Input where the manufacturer is located.



Navigating the NanoFASE Curation Process: Measurement Tabs

The "Instance" tab is where we record the time parameters describing all the instances in a given study.

The datasetId will be assigned by the database.

Give each Instance row a unique numerical ID in the order they occur in your experiment, except for Instances where the nanomaterial is characterized or a control is run. When the nanomaterial is characterized or a control is run input: valid values: 'stock dispersion', 'bulk dispersion', 'control', or 'solid material'.

Input the amount time that has passed since the last set of measurements or specific reference point (e.g. post plant emergence). Start with time 0.

Input the time unit relevant to your experiment. This can be simple time units (e.g. day, hour) or more specific (e.g. day post fertilization)

datasetId	Instance	timeRelative	timeUnit	timeAbsolute	timeUnit	Date
01.001/1000	Stock dispersion	0	Day	0	Day	22-Dec-18
01.001/1000	Bulk dispersion	0	Day	0	Day	
01.001/1000	Coating control	0	Day	0	Day	
01.001/1000	Control	0	Day	0	Day	
01.001/1000	I0	0	Day	0	Day	
01.001/1000	I1	7	Day	7	Day	
01.001/1000	I2	1	Day post emergence	8	Day	
01.001/1000	I3	4	Day post emergence	11	Day	
01.001/1000	I4	6	Day post emergence	13	Day	
01.001/1000	I5	13	Day post emergence		Day	
01.001/1000	I6	27	Day post emergence	34	Day	
01.001/1000	I7	0	Day		Day	

Navigating the NanoFASE Curation Process: Measurement Tabs

The "Instance" tab is where we record the time parameters describing all the instances in a given study.

Input the actual time that has passed since you started the experiment.

Input the time unit. This can only be a simple time unit (e.g. sec, min, hour, day, hour, month).

Input the date and time of measurement, if possible.

datasetId	Instance	timeRelative	timeUnit	timeAbsolute	timeUnit	Date
01.001/1000	Stock dispersion	0	Day	0	Day	22-Dec-18
01.001/1000	Bulk dispersion	0	Day	0	Day	
01.001/1000	Coating control	0	Day	0	Day	
01.001/1000	Control	0	Day	0	Day	
01.001/1000	I0	0	Day	0	Day	
01.001/1000	I1	7	Day	7	Day	
01.001/1000	I2	1	Day post emergence	8	Day	
01.001/1000	I3	4	Day post emergence	11	Day	
01.001/1000	I4	6	Day post emergence	13	Day	
01.001/1000	I5	13	Day post emergence		Day	
01.001/1000	I6	27	Day post emergence	34	Day	
01.001/1000	I7	0	Day		Day	

Navigating the NanoFASE Curation Process: Measurement Tabs

The "Measurement" tab is where we record the measurements and endpoints recorded in the study. It is where we link the reference and methods tabs together, and instances to defining parameters such as the material or medium. (Column A – F)

The datasetId will be assigned by the database.

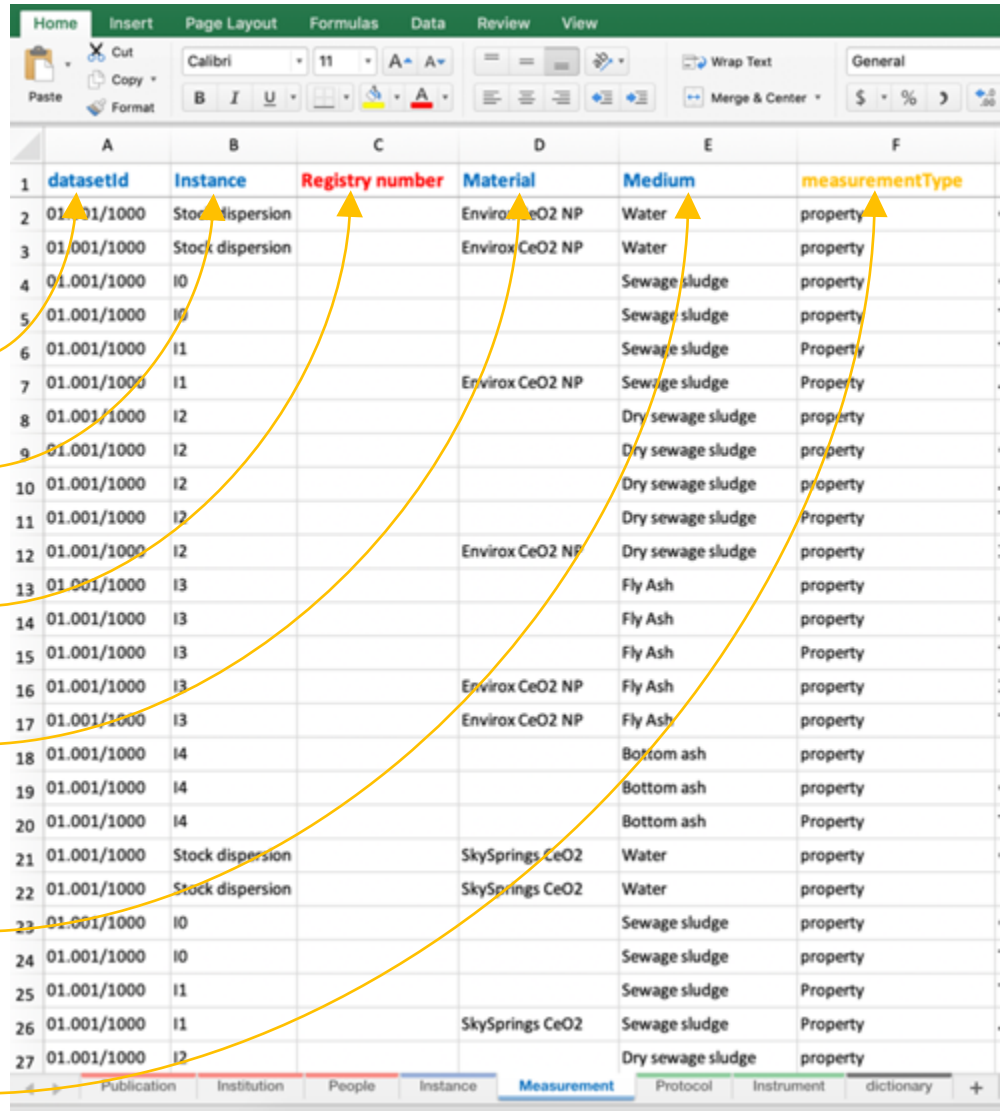
Link instances from "Instance" tab to measurement tab using Ids.

Include registry number of nanomaterials from the NanoCommons's project. See next slide

Input the material name using the BiomaxID given to each unique nanomaterial. See next slide

Input the medium or environment that the nanomaterial is in. Keep in mind this could be an environmental medium, or an animal, or any surroundings.

The "measurementType" should always be property.



	A	B	C	D	E	F
1	datasetId	Instance	Registry number	Material	Medium	measurementType
2	01.001/1000	Stock dispersion		Envirox CeO2 NP	Water	property
3	01.001/1000	Stock dispersion		Envirox CeO2 NP	Water	property
4	01.001/1000	I0			Sewage sludge	property
5	01.001/1000	I0			Sewage sludge	property
6	01.001/1000	I1			Sewage sludge	Property
7	01.001/1000	I1		Envirox CeO2 NP	Sewage sludge	Property
8	01.001/1000	I2			Dry sewage sludge	property
9	01.001/1000	I2			Dry sewage sludge	property
10	01.001/1000	I2			Dry sewage sludge	property
11	01.001/1000	I2			Dry sewage sludge	Property
12	01.001/1000	I2		Envirox CeO2 NP	Dry sewage sludge	property
13	01.001/1000	I3			Fly Ash	property
14	01.001/1000	I3			Fly Ash	property
15	01.001/1000	I3			Fly Ash	Property
16	01.001/1000	I3		Envirox CeO2 NP	Fly Ash	property
17	01.001/1000	I3		Envirox CeO2 NP	Fly Ash	property
18	01.001/1000	I4			Bottom ash	property
19	01.001/1000	I4			Bottom ash	property
20	01.001/1000	I4			Bottom ash	Property
21	01.001/1000	Stock dispersion		SkySprings CeO2	Water	property
22	01.001/1000	Stock dispersion		SkySprings CeO2	Water	property
23	01.001/1000	I0			Sewage sludge	property
24	01.001/1000	I0			Sewage sludge	property
25	01.001/1000	I1			Sewage sludge	Property
26	01.001/1000	I1		SkySprings CeO2	Sewage sludge	Property
27	01.001/1000	I2			Dry sewage sludge	property

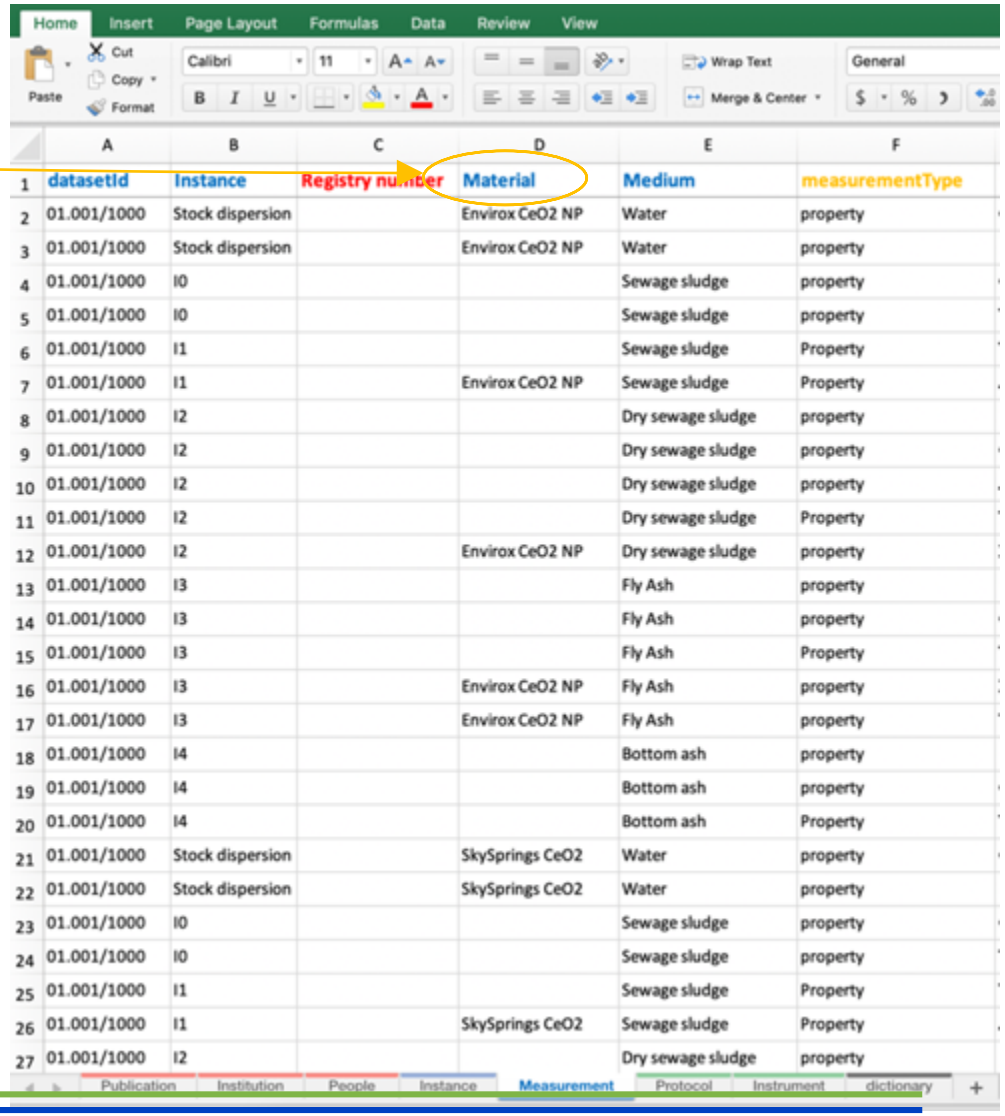
Measurement Tab: Naming the Material

	Particle ID	NanoFASE name	Designator	All NP names	Particle type	Nominal size (txt)	Minimal size	Maximal size	Supplier	Bespoke	Availability	Coating
	NP00678	PROM-Ag	ME-202	PROM-Ag	Ag	TBC			PROM	Bespoke	In stock (1 L)	Uncoated
	NP00679	PROM-Ag-polymer	ME-208-A ME-208-B ME-117-C	PROM-Ag-polymer	Ag	40-50 nm	40.0	50.0	PROM	Bespoke	In stock (A: 250 ml; B: 250 ml; C: 100 ml)	Polymer
	NP00680	UoB-XC-HA-BP-PEG	12092016 13092016-5 14092016	UoB-XC-HA-BP-PEG	Ca	Three sizes available			UoB	Bespoke	100 mg in stock for each of three sizes, one day synthesis	BP-PEG
	NP00681	PROM-CeO2-PVP	FASE-005-B	PROM-CeO2-PVP	Ce	Primary particle size ~5-10 nm	5.0	10.0	PROM	Bespoke	In stock (700 ml)	PVP 40k
	NP00682	UoB-XC-Cu-1	12052017-3-1	UoB-XC-Cu-1	Cu	30 nm	30.0	30.0	UoB	Bespoke	1 g in stock, two day synthesis	Oley amine

https://ssl.biomax.de/nanofase/

The NanoFASE Knowledge Base assigns an unique Id to nanomaterials used in the project. The link above will allow you to search the Knowledge Base to find the nanomaterial you used in your experiment. Input the name of your nanomaterial found in 'NanoFASE name' column, in the 'Material' column of the Excel template.

**Note: you will need a username and password to access. Contact: nanofase@biomax.com*



	A	B	C	D	E	F
1	datasetId	Instance	Registry number	Material	Medium	measurementType
2	01.001/1000	Stock dispersion		Envirox CeO2 NP	Water	property
3	01.001/1000	Stock dispersion		Envirox CeO2 NP	Water	property
4	01.001/1000	I0			Sewage sludge	property
5	01.001/1000	I0			Sewage sludge	property
6	01.001/1000	I1			Sewage sludge	Property
7	01.001/1000	I1		Envirox CeO2 NP	Sewage sludge	Property
8	01.001/1000	I2			Dry sewage sludge	property
9	01.001/1000	I2			Dry sewage sludge	property
10	01.001/1000	I2			Dry sewage sludge	property
11	01.001/1000	I2			Dry sewage sludge	Property
12	01.001/1000	I2		Envirox CeO2 NP	Dry sewage sludge	property
13	01.001/1000	I3			Fly Ash	property
14	01.001/1000	I3			Fly Ash	property
15	01.001/1000	I3			Fly Ash	Property
16	01.001/1000	I3		Envirox CeO2 NP	Fly Ash	property
17	01.001/1000	I3		Envirox CeO2 NP	Fly Ash	property
18	01.001/1000	I4			Bottom ash	property
19	01.001/1000	I4			Bottom ash	property
20	01.001/1000	I4			Bottom ash	Property
21	01.001/1000	Stock dispersion		SkySprings CeO2	Water	property
22	01.001/1000	Stock dispersion		SkySprings CeO2	Water	property
23	01.001/1000	I0			Sewage sludge	property
24	01.001/1000	I0			Sewage sludge	property
25	01.001/1000	I1			Sewage sludge	Property
26	01.001/1000	I1		SkySprings CeO2	Sewage sludge	Property
27	01.001/1000	I2			Dry sewage sludge	property

Measurement Tab: Naming the Material

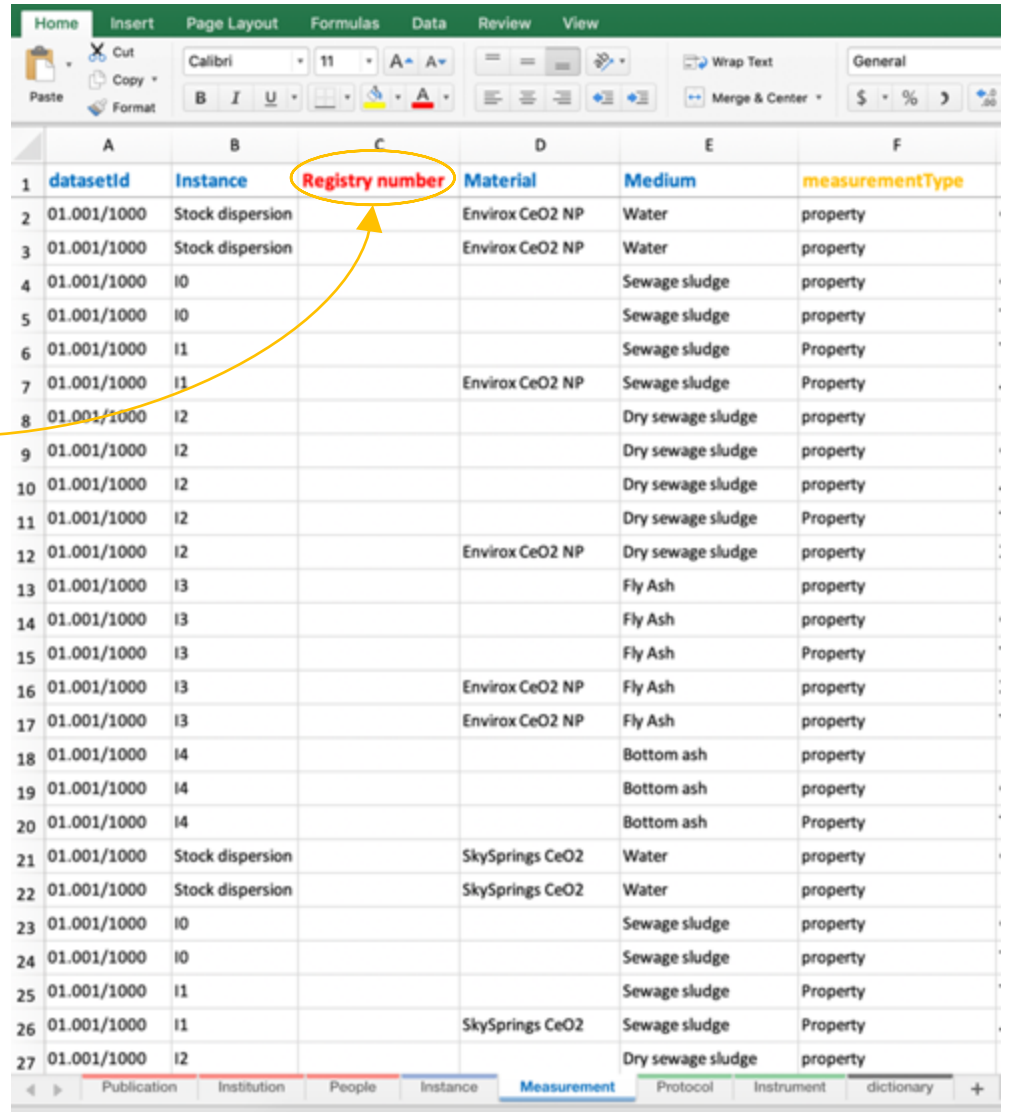
"The European Registry of Materials is a simple registry with the sole purpose to mint material identifiers to be used by research projects throughout the life cycle of their project.

The Registry has been initiated by the NanoCommons project by Maastricht University and is been supported by CEH and UoB.

All NanoFASE materials will be added into the registry and linked to both the NanoFASE portal and submitted datasets in the highlighted column

This is a process that has been assigned to UoB and CEH and will take place during the duration of the NanoCommons project and will continue after NanoFASE has ended.

NanoFASE partners are free to register the materials they used, if they wish, but this is not mandatory for the data capturing process. If you would like to do so see the next slide, visit the registry online via the link provided to start the registration process. Else please skip to slide 19.



	A	B	C	D	E	F
1	datasetId	Instance	Registry number	Material	Medium	measurementType
2	01.001/1000	Stock dispersion		Envirox CeO2 NP	Water	property
3	01.001/1000	Stock dispersion		Envirox CeO2 NP	Water	property
4	01.001/1000	I0			Sewage sludge	property
5	01.001/1000	I0			Sewage sludge	property
6	01.001/1000	I1			Sewage sludge	Property
7	01.001/1000	I1		Envirox CeO2 NP	Sewage sludge	Property
8	01.001/1000	I2			Dry sewage sludge	property
9	01.001/1000	I2			Dry sewage sludge	property
10	01.001/1000	I2			Dry sewage sludge	property
11	01.001/1000	I2			Dry sewage sludge	Property
12	01.001/1000	I2		Envirox CeO2 NP	Dry sewage sludge	property
13	01.001/1000	I3			Fly Ash	property
14	01.001/1000	I3			Fly Ash	property
15	01.001/1000	I3			Fly Ash	Property
16	01.001/1000	I3		Envirox CeO2 NP	Fly Ash	property
17	01.001/1000	I3		Envirox CeO2 NP	Fly Ash	property
18	01.001/1000	I4			Bottom ash	property
19	01.001/1000	I4			Bottom ash	property
20	01.001/1000	I4			Bottom ash	Property
21	01.001/1000	Stock dispersion		SkySprings CeO2	Water	property
22	01.001/1000	Stock dispersion		SkySprings CeO2	Water	property
23	01.001/1000	I0			Sewage sludge	property
24	01.001/1000	I0			Sewage sludge	property
25	01.001/1000	I1			Sewage sludge	Property
26	01.001/1000	I1		SkySprings CeO2	Sewage sludge	Property
27	01.001/1000	I2			Dry sewage sludge	property

Measurement Tab: Naming the Material

How to register new materials

The process to register new materials is described in this document.

How to use the identifier

The identifier is supposed to be use in all written material. The identfier will be a simple identifier starting with "ERM". It is recommended to use the identifier in the Compact Identifier form (identifiers.org entry)

Use in semantic web solutions

For use in semantic web approaches, an equivalent IRI version is available with prefixes the short identifier with "https://nanocommons.github.io/identifiers/registry#".

Registered materials

- the full list can be found at https://nanocommons.github.io/identifiers/registry (Turtle format)
- ERM00000001-ERM00000057 for NanoSolveIT
- < you can be the second >

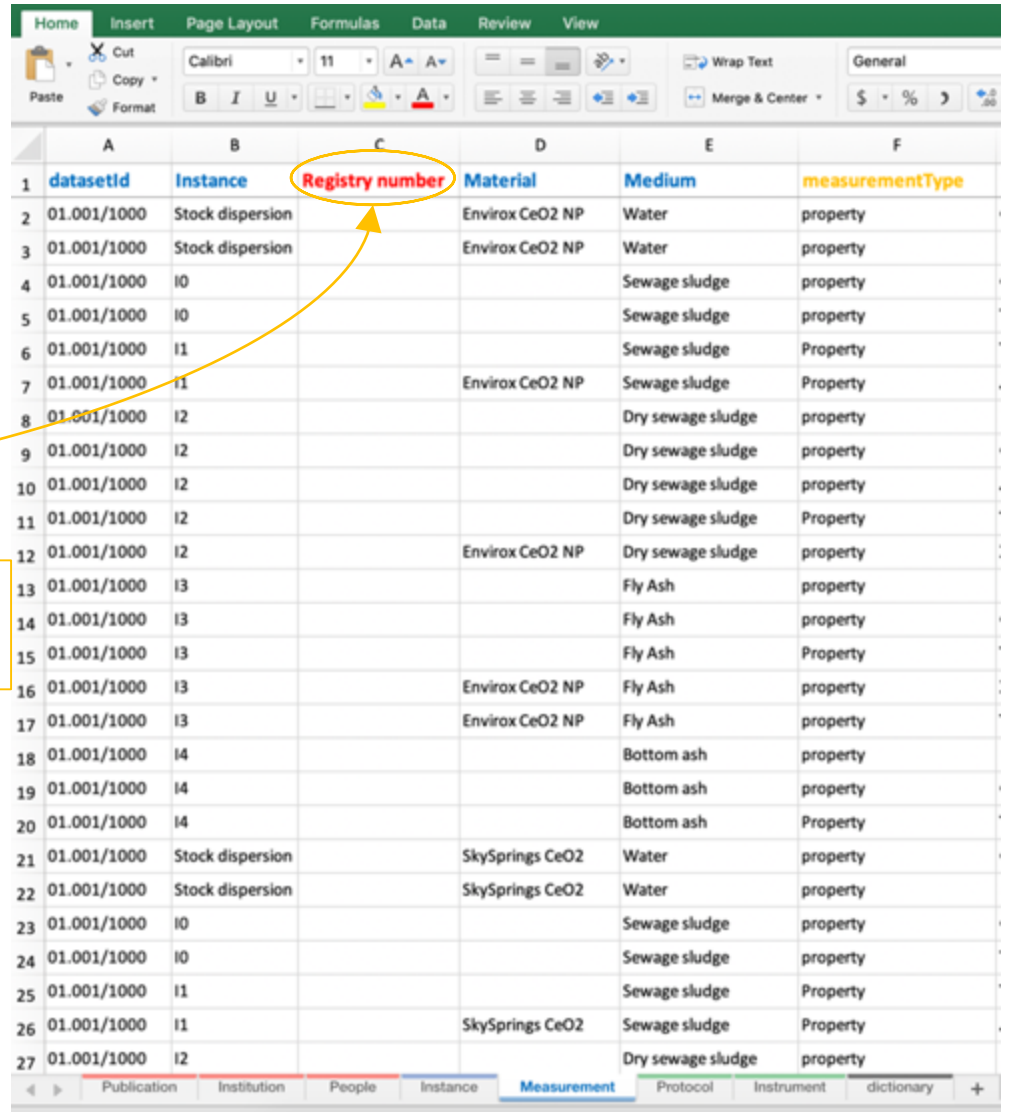
Acknowledgement

This registry is supported by NanoCommons. NanoCommons has received funding from European Union Horizon 2020 Programme (H2020) under grant agreement nº 731032.

Select the highlighted link to access the list of registered materials.

https://nanocommons.github.io/identifiers/

"The European Registry of Materials is a simple registry with the sole purpose to mint material identifiers to be used by research projects throughout the life cycle of their project (From above website)." Input the registry number of the nanomaterial found in the downloaded document, in the 'Registry number' column of the Excel template.



	A	B	C	D	E	F
1	datasetId	Instance	Registry number	Material	Medium	measurementType
2	01.001/1000	Stock dispersion		Envirox CeO2 NP	Water	property
3	01.001/1000	Stock dispersion		Envirox CeO2 NP	Water	property
4	01.001/1000	I0			Sewage sludge	property
5	01.001/1000	I0			Sewage sludge	property
6	01.001/1000	I1			Sewage sludge	Property
7	01.001/1000	I1		Envirox CeO2 NP	Sewage sludge	Property
8	01.001/1000	I2			Dry sewage sludge	property
9	01.001/1000	I2			Dry sewage sludge	property
10	01.001/1000	I2			Dry sewage sludge	property
11	01.001/1000	I2			Dry sewage sludge	Property
12	01.001/1000	I2		Envirox CeO2 NP	Dry sewage sludge	property
13	01.001/1000	I3			Fly Ash	property
14	01.001/1000	I3			Fly Ash	property
15	01.001/1000	I3			Fly Ash	Property
16	01.001/1000	I3		Envirox CeO2 NP	Fly Ash	property
17	01.001/1000	I3		Envirox CeO2 NP	Fly Ash	property
18	01.001/1000	I4			Bottom ash	property
19	01.001/1000	I4			Bottom ash	property
20	01.001/1000	I4			Bottom ash	Property
21	01.001/1000	Stock dispersion		SkySprings CeO2	Water	property
22	01.001/1000	Stock dispersion		SkySprings CeO2	Water	property
23	01.001/1000	I0			Sewage sludge	property
24	01.001/1000	I0			Sewage sludge	property
25	01.001/1000	I1			Sewage sludge	Property
26	01.001/1000	I1		SkySprings CeO2	Sewage sludge	Property
27	01.001/1000	I2			Dry sewage sludge	property

Navigating the NanoFASE Curation Process: Measurement Tabs

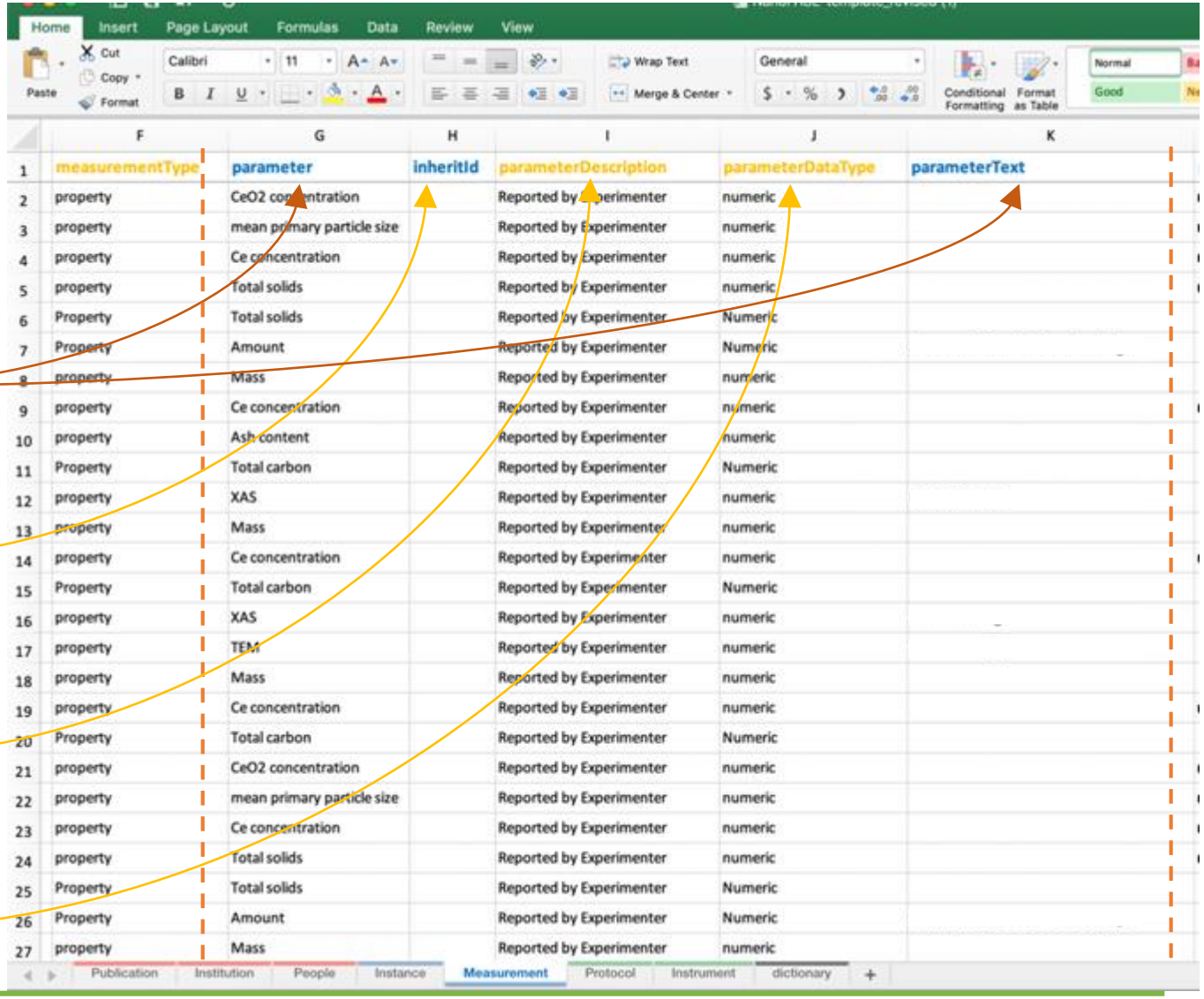
The "Measurement" tab is where we record the measurements and endpoints recorded in the study. It is where we link the reference and methods tabs together, and instances to defining parameters such as the material or medium. *(Column G – K)*

Input the measured parameters/endpoints.
Only input parameterText values if the measurement is not numerical.

If parameter values are the same from a previous 'instance', then input the InstanceId here.

Input who made or recorded the measurement.
Valid Values: 'Made by Experimenter', 'Reported by Experimenter', 'Received from Supplier', 'Reported by Supplier', 'Reported by Modeler'

Input whether the parameter is in a text or numerical format. *Valid Values: 'Text', 'Numeric'*



	F	G	H	I	J	K
1	measurementType	parameter	inheritId	parameterDescription	parameterDataType	parameterText
2	property	CeO2 concentration		Reported by Experimenter	numeric	
3	property	mean primary particle size		Reported by Experimenter	numeric	
4	property	Ce concentration		Reported by Experimenter	numeric	
5	property	Total solids		Reported by Experimenter	numeric	
6	Property	Total solids		Reported by Experimenter	Numeric	
7	Property	Amount		Reported by Experimenter	Numeric	
8	property	Mass		Reported by Experimenter	numeric	
9	property	Ce concentration		Reported by Experimenter	numeric	
10	property	Ash content		Reported by Experimenter	numeric	
11	Property	Total carbon		Reported by Experimenter	Numeric	
12	property	XAS		Reported by Experimenter	numeric	
13	property	Mass		Reported by Experimenter	numeric	
14	property	Ce concentration		Reported by Experimenter	numeric	
15	Property	Total carbon		Reported by Experimenter	Numeric	
16	property	XAS		Reported by Experimenter	numeric	
17	property	TEM		Reported by Experimenter	numeric	
18	property	Mass		Reported by Experimenter	numeric	
19	property	Ce concentration		Reported by Experimenter	numeric	
20	Property	Total carbon		Reported by Experimenter	Numeric	
21	property	CeO2 concentration		Reported by Experimenter	numeric	
22	property	mean primary particle size		Reported by Experimenter	numeric	
23	property	Ce concentration		Reported by Experimenter	numeric	
24	property	Total solids		Reported by Experimenter	numeric	
25	Property	Total solids		Reported by Experimenter	Numeric	
26	Property	Amount		Reported by Experimenter	Numeric	
27	property	Mass		Reported by Experimenter	numeric	

Navigating the NanoFASE Curation Process: Measurement Tabs

The "Measurement" tab is where we record the measurements and endpoints recorded in the study. It is where we link the reference and methods tabs together, and instances to defining parameters such as the material or medium. (Column L – T)

Input statistic qualifier of numerical value. Valid values include: 'mean', 'median'

Input number of samples.

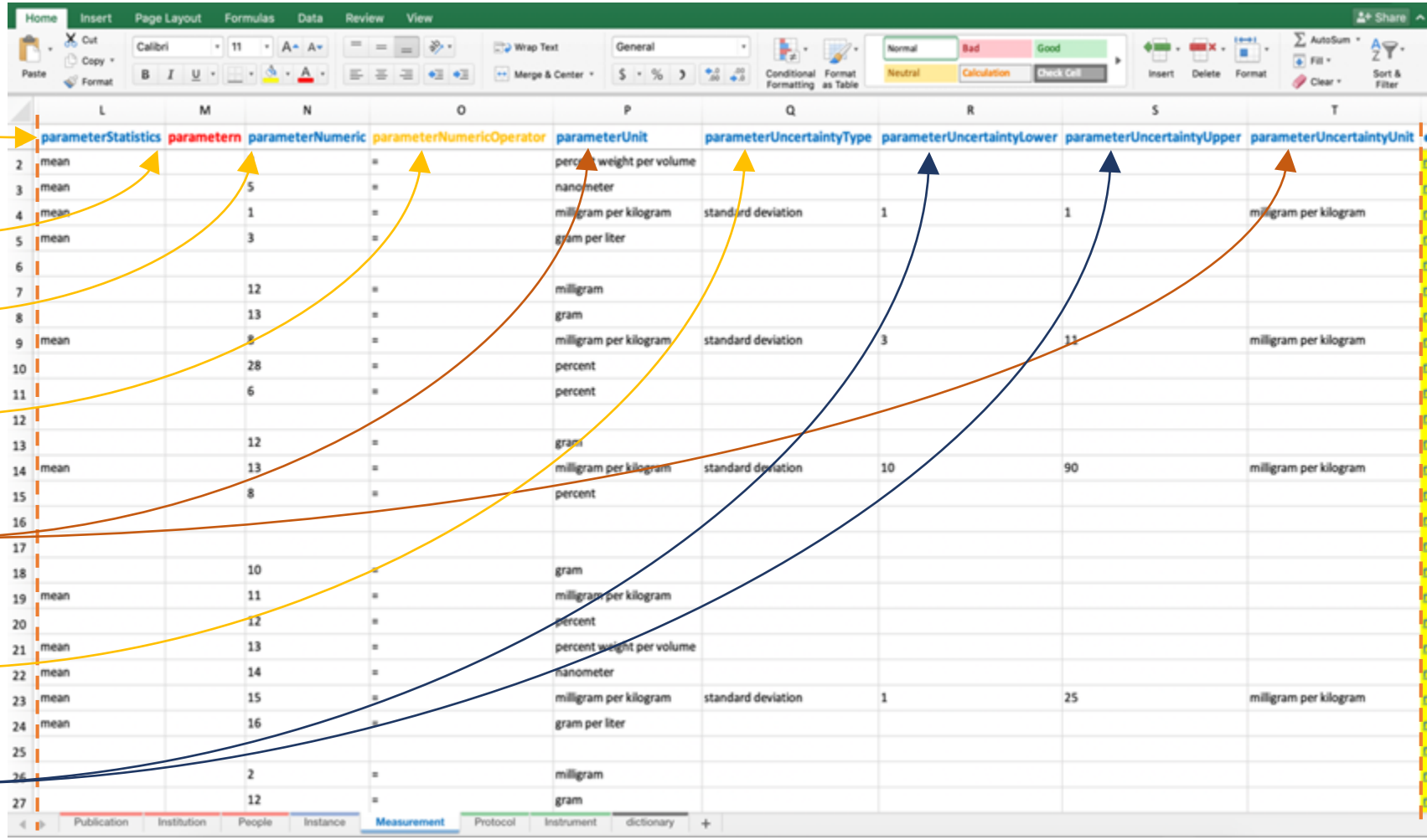
Input the numeric value.

Input operator qualifier of numerical value. Valid values include: '<', '>', '=', '~'

Input unit describing numerical value (in singular form e.g. milligram not milligrams).

Input numerical uncertainty. Valid values include: 'standard deviation', 'range', 'standard error of the mean', 'standard error'

Input numerical values of uncertainty.



	L	M	N	O	P	Q	R	S	T
1	parameterStatistics	parametern	parameterNumeric	parameterNumericOperator	parameterUnit	parameterUncertaintyType	parameterUncertaintyLower	parameterUncertaintyUpper	parameterUncertaintyUnit
2	mean			=	percent weight per volume				
3	mean		5	=	nanometer				
4	mean		1	=	milligram per kilogram	standard deviation	1	1	milligram per kilogram
5	mean		3	=	gram per liter				
6									
7			12	=	milligram				
8			13	=	gram				
9	mean		9	=	milligram per kilogram	standard deviation	3	11	milligram per kilogram
10			28	=	percent				
11			6	=	percent				
12									
13			12	=	gram				
14	mean		13	=	milligram per kilogram	standard deviation	10	90	milligram per kilogram
15			8	=	percent				
16									
17									
18			10	=	gram				
19	mean		11	=	milligram per kilogram				
20			12	=	percent				
21	mean		13	=	percent weight per volume				
22	mean		14	=	nanometer				
23	mean		15	=	milligram per kilogram	standard deviation	1	25	milligram per kilogram
24	mean		16	=	gram per liter				
25									
26			2	=	milligram				
27			12	=	gram				

Navigating the NanoFASE Curation Process: Measurement Tabs

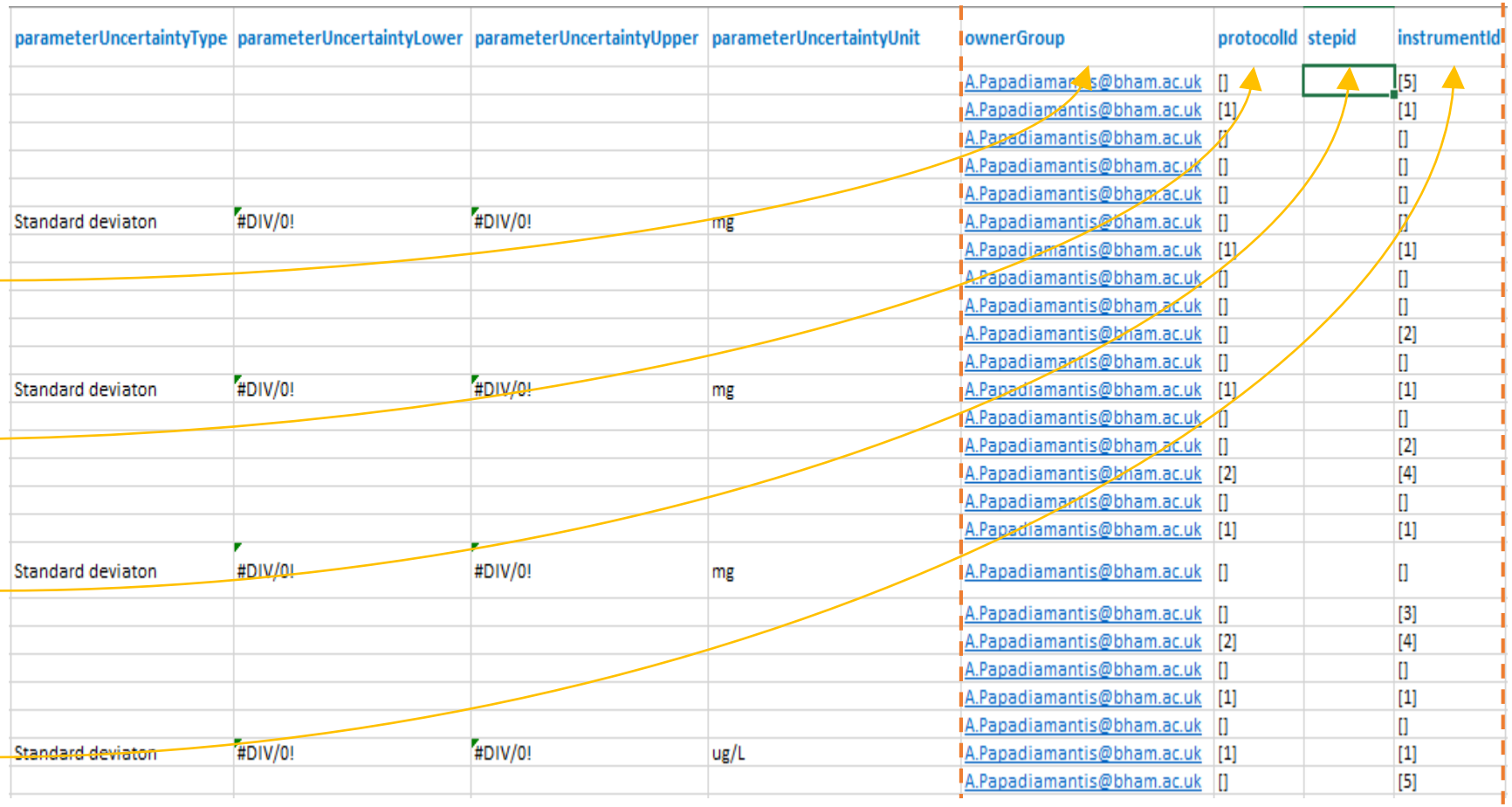
The "Measurement" tab is where we record the measurements and endpoints recorded in the study. It is where we link the reference and methods tabs together, and instances to defining parameters such as the material or medium. (Column U – W)

Input the email for who measured the endpoints and characterizations recorded in the spreadsheet.

Input the protocolId of the method used to take a measurement or endpoint.

Input the stepId of the protocol used take a measurement or endpoint. Include if your protocol has multiple steps.

Input the instrumentId of the instrument used to take a measurement of endpoint.



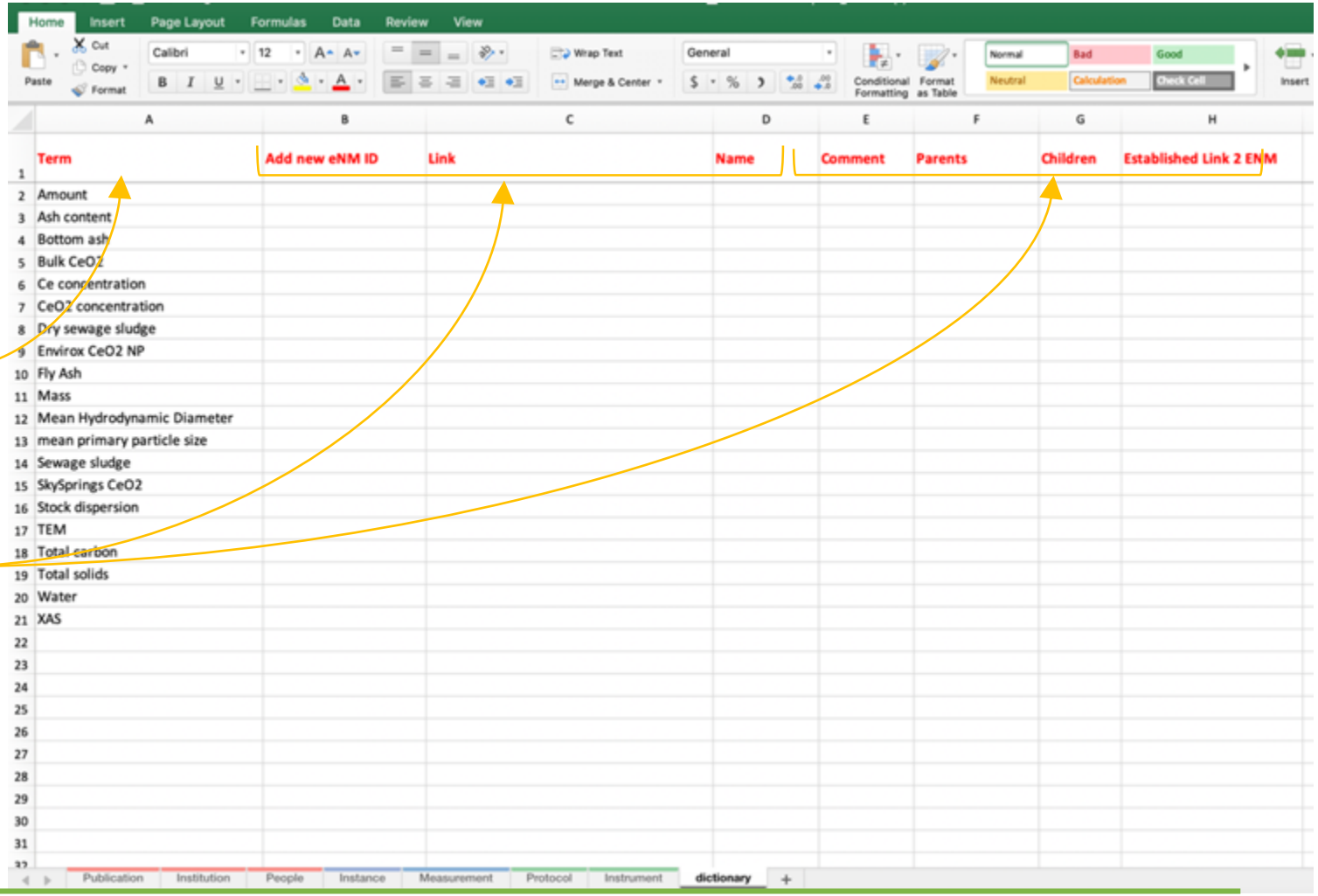
parameterUncertaintyType	parameterUncertaintyLower	parameterUncertaintyUpper	parameterUncertaintyUnit	ownerGroup	protocolId	stepid	instrumentId
				A.Papadiamantis@bham.ac.uk	[]		[5]
				A.Papadiamantis@bham.ac.uk	[1]		[1]
				A.Papadiamantis@bham.ac.uk	[]		[]
				A.Papadiamantis@bham.ac.uk	[]		[]
				A.Papadiamantis@bham.ac.uk	[]		[]
Standard deviaton	#DIV/0!	#DIV/0!	mg	A.Papadiamantis@bham.ac.uk	[]		[]
				A.Papadiamantis@bham.ac.uk	[1]		[1]
				A.Papadiamantis@bham.ac.uk	[]		[]
				A.Papadiamantis@bham.ac.uk	[]		[]
				A.Papadiamantis@bham.ac.uk	[]		[2]
				A.Papadiamantis@bham.ac.uk	[]		[]
Standard deviaton	#DIV/0!	#DIV/0!	mg	A.Papadiamantis@bham.ac.uk	[1]		[1]
				A.Papadiamantis@bham.ac.uk	[]		[]
				A.Papadiamantis@bham.ac.uk	[]		[2]
				A.Papadiamantis@bham.ac.uk	[2]		[4]
				A.Papadiamantis@bham.ac.uk	[]		[]
				A.Papadiamantis@bham.ac.uk	[1]		[1]
Standard deviaton	#DIV/0!	#DIV/0!	mg	A.Papadiamantis@bham.ac.uk	[]		[]
				A.Papadiamantis@bham.ac.uk	[]		[3]
				A.Papadiamantis@bham.ac.uk	[2]		[4]
				A.Papadiamantis@bham.ac.uk	[]		[]
				A.Papadiamantis@bham.ac.uk	[1]		[1]
				A.Papadiamantis@bham.ac.uk	[]		[]
Standard deviaton	#DIV/0!	#DIV/0!	ug/L	A.Papadiamantis@bham.ac.uk	[1]		[1]
				A.Papadiamantis@bham.ac.uk	[]		[5]

Navigating the NanoFASE Curation Process: Dictionary Tab

The "Dictionary" tab is where we record the all of the parameter and parameterText terms recorded in the study. It is where we link to outside ontologies such as eNanoMapper.

Add the key terms that you believe would be critical in designing queries to find datasets similar to yours.

Leave columns blank. These columns will be filled out by the curator



	A	B	C	D	E	F	G	H
1	Term	Add new eNM ID	Link	Name	Comment	Parents	Children	Established Link 2 ENM
2	Amount							
3	Ash content							
4	Bottom ash							
5	Bulk CeO2							
6	Ce concentration							
7	CeO2 concentration							
8	Dry sewage sludge							
9	Envirox CeO2 NP							
10	Fly Ash							
11	Mass							
12	Mean Hydrodynamic Diameter							
13	mean primary particle size							
14	Sewage sludge							
15	SkySprings CeO2							
16	Stock dispersion							
17	TEM							
18	Total carbon							
19	Total solids							
20	Water							
21	XAS							

Part 2: How to Create the Instance Map

The second section of the visual manual delves into how to make your Instance Map(s), which is a visual representation of your experiment(s) applying NIKC database concepts.

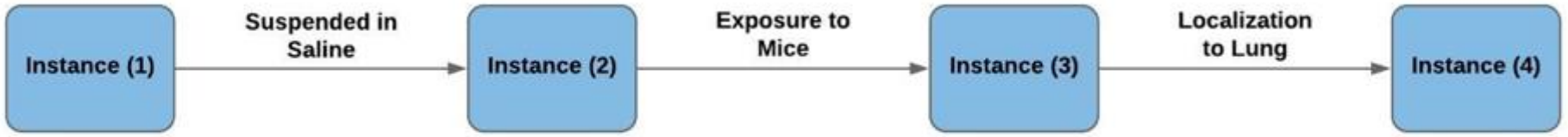
Your Instance Map will be uploaded onto the database to accompany your dataset.

When users are querying the database to determine if your dataset will be useful for their needs, your Instance Map will quickly communicate experimental parameters and designs.

NIKC Curation: Categorizing Data

Instance	Describes the chemical or biological properties of the nanomaterial and the medium at a specific moment in time.
Material	The nanomaterial being studied.
Medium	Describes the nanomaterial's environment(s).
Supplementary	Digital images, documents, or tables.
Property	Can be used to describe the instance, medium, material, or supplementary.

Step 1: Identify Your Instances



How do I identify my Instances?

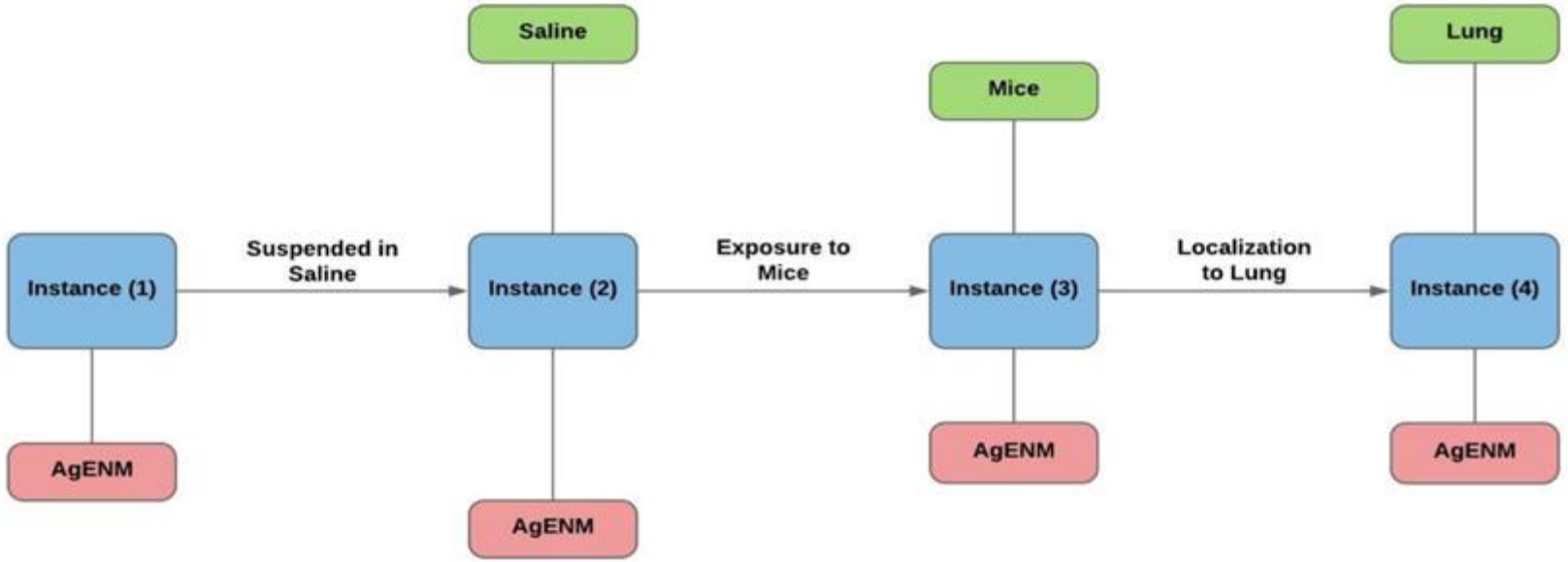
Has a change occurred that transformed the properties of the nanomaterial or the medium?

- **Functionalization of the nanomaterial**
- **Dispersion of the nanomaterial in solution**
- **Time point measurements**
- **Transport/Accumulation of the nanomaterial from the exposure site**

Instance

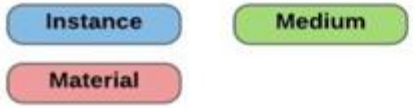
Describes the chemical or biological properties of the nanomaterial and the medium at a specific moment in time.

Step 2: Identify Materials and Mediums



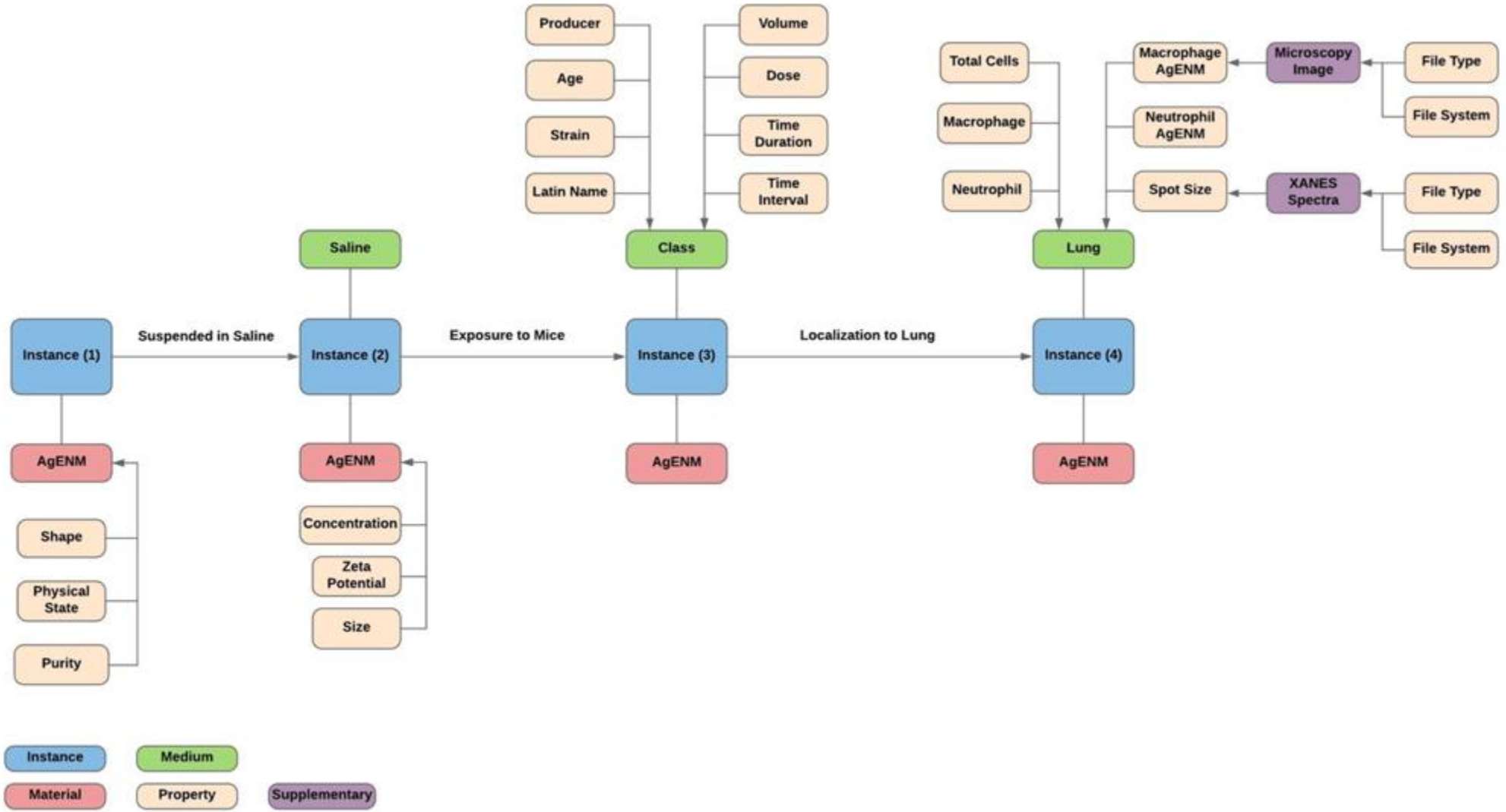
Rules for the Medium and the Material

- **An Instance can have more than one medium**
- **Each Instance Map can only have one nanomaterial. If there is more than one material for an experiment, then another instance map needs to be created.**



Smulders, S et al. Toxicol Lett 238 (1), 1-6. 2015 Oct 1.

Step 3: Measurements and Endpoints



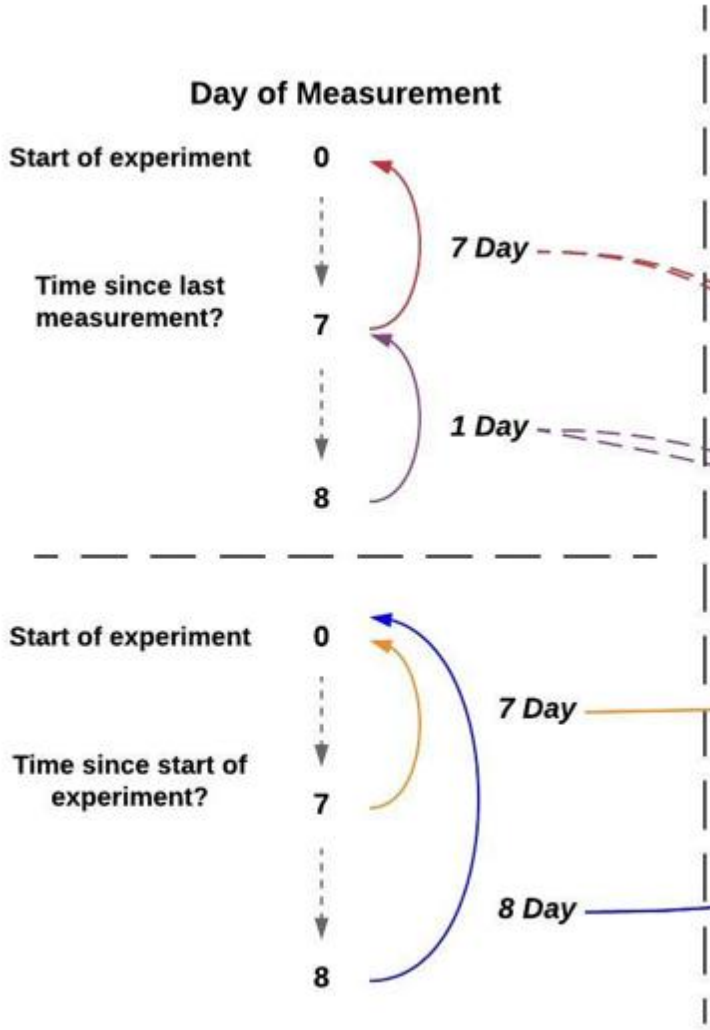
Part 3: Translating Your Map to Template

The third section of the visual manual delves into how to translate your Instance Map to the Excel template, connecting the template your NIKC adapted experiment.

The translation section will walk you through where to put the information from map in the template.

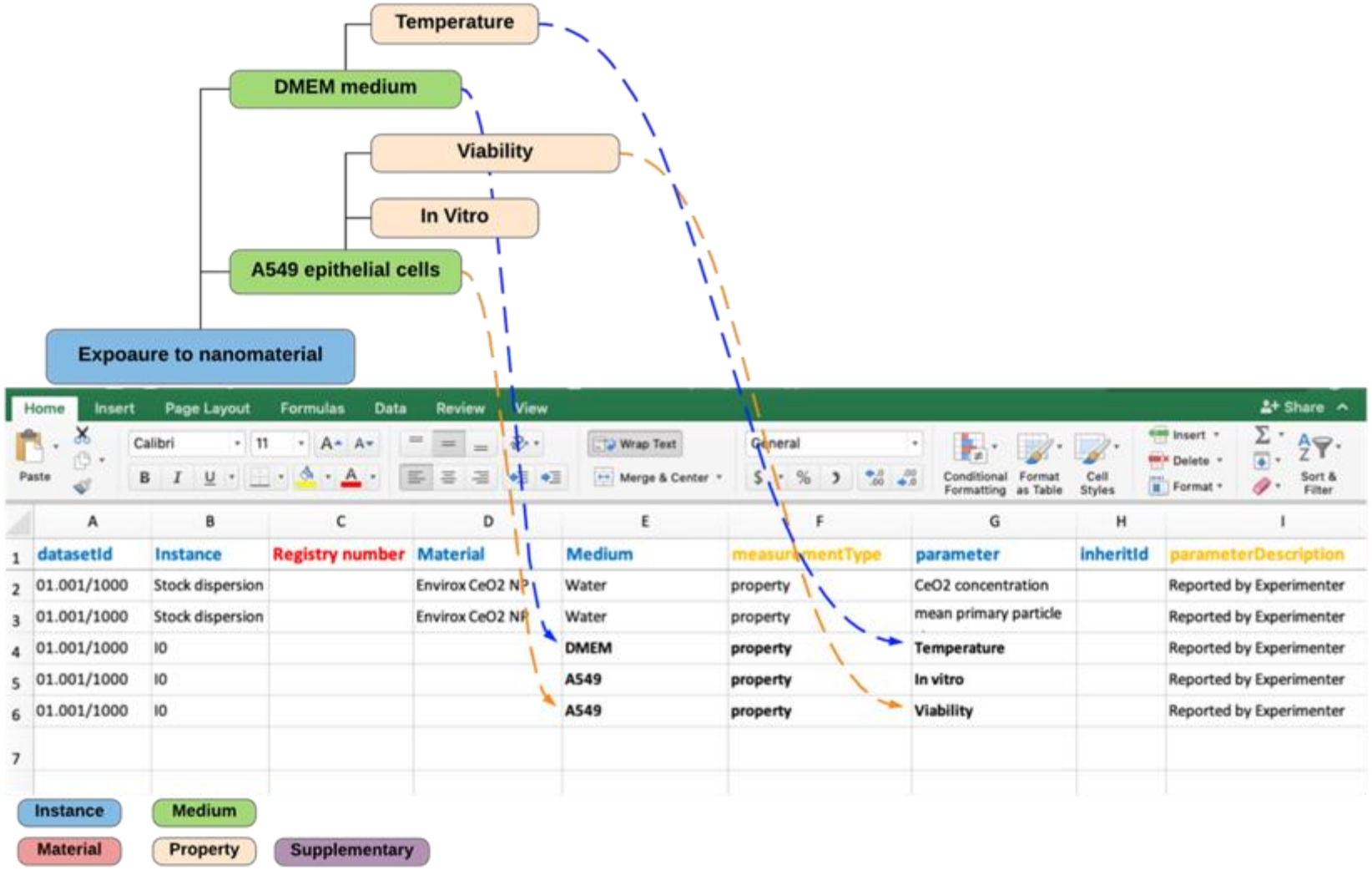
You can think of your Instance Map as the blueprint for how you will layout your Excel template.

Time-Dependent Measurements



datasetId	Instance	timeRelative	timeUnit	timeAbsolute	timeUnit	Date
01.001/1000	Stock dispersion	0	Day	0	Day	22-Dec-18
01.001/1000	Bulk dispersion	0	Day	0	Day	
01.001/1000	Coating control	0	Day	0	Day	
01.001/1000	Control	0	Day	0	Day	
01.001/1000	I0	0	Day	0	Day	
01.001/1000	I1	7	Day	7	Day	
01.001/1000	I2	1	Day post emergence	8	Day	
01.001/1000	I3	4	Day post emergence	11	Day	
01.001/1000	I4	6	Day post emergence	13	Day	
01.001/1000	I5	13	Day post emergence		Day	
01.001/1000	I6	27	Day post emergence	34	Day	
01.001/1000	I7	0	Day		Day	

Identifying Parameters: Medium



Additional Help Sources

- If you are in need of additional information, please refer to:
  - Example Excel Template: This template provides example diagrams explaining how to fill out the Excel Sheets.
  - Curation Word Manual: The Word document provides more explanations on the NIKC concepts and NIKC Excel Template discussed in visual manual.
- Please submit completed curated templates by:
  - Initial datasets to be submitted by end of August and uploaded for the final review meeting
  - All datasets by 20 September 2019
  - All to be sent to Anastasios Papadiamantis (A.Papadiamantis@bham.ac.uk)