**PETRA IV Scientific Instrumentation Proposal**

**template TITLE**

1. **Science Case (1 A4 page, max. 2 Figures)**

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* Motivation / Scientific Background
* Results expected and their scientific impact
* Novelty statement
1. **Experiment Description (1 - 2 A4 pages, max. 2 Figures)**

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* Sample environment (Travel range, Size, Pressure, Temperature)
* Detector (Specifications, Angular range, Pixel size, Frame rate)
* Data Acquisition (Required computational power, Data analysis tools, Rapid data reduction and analysis for real‐time feedback, Expected amount of data/day !!, Real-time

data analysis of detector required)

* Experimental setup (Goniometer, 3D tomography stage, gas cell, …)
* Technical equipment
1. **Explanation of the use of PETRA IV Parameters (200 words)**

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* Importance of PETRA IV
* Focus size / Flux / Energy resolution /Element sensitivity / Spatial Coherence
* Faster data acquisition, Extension of coherence technique to high photon energies

**References**

1. Moritz et al. “odododo” Science **34**, 9 (2020)