



SP B.1: 2023 Erosion experiments in GyM

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Beneficiary: ENEA

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- **Samples** from **SP B.4** → W and W+O films on Mo substrates
 - 6 CMSII 5.1 μm W films and 6 CMSII 4 μm W+O films from IAP
 - 6 HiPIMS 1 μm W films and 6 PLD 1 μm W+O films from PoliMi

Already available

- **5 exposures** in total with each kind of sample (last set as reference)
- **Cross-machine experiment**

GyM ($10^{19} - 10^{21} \text{ m}^{-2} \text{ s}^{-1}$), **PSI-2** ($10^{20} - 10^{23} \text{ m}^{-2} \text{ s}^{-1}$) and **MAGNUM-PSI** ($10^{23} - 10^{25} \text{ m}^{-2} \text{ s}^{-1}$)

- **Goal (?)**: investigate **effect of ion flux** on exposure results (erosion, morphology changes...)
 - **Helium** plasma ($\sim 6 \cdot 10^{20} \text{ m}^{-2} \text{ s}^{-1}$)
 - **1** impinging **He⁺ energy** (one sample-holder bias voltage value), e.g. **150 eV**
 - **Fluence scan**: one value (at least) accessible to all 3 LPDs
e.g. $\sim 1.5 \text{e}25 \text{ He}^+ \text{m}^{-2}$ (i.e. He plasma fluence with GyM after a working-day)
- **Characterizations in Milan** → weighing, AFM and SEM