Supplementary Information:

Environment effects on the electronic states of MoS_2 flakes probed by micro-ARPES

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The full-width at half-maximum (FWHM) of the MDC electronic bands along the ΓK direction of the Brillouin Zone, in the low-BE region (1.0-2.2 eV range) has been evaluated as reported in Fig. S1. In that low-BE energy range, the FWHM varies by 0.15 Å^{-1} (from ~0.45 Å^{-1} to ~0.30 Å^{-1}) for the air-protected sample A, while it varies by 0.30 Å^{-1} (from ~0.75 Å^{-1} to ~0.45 Å^{-1}) for the air-exposed sample B. There is a clear band broadening of the air-exposed sample, likely to be associated to some oxygen contamination [1,2].

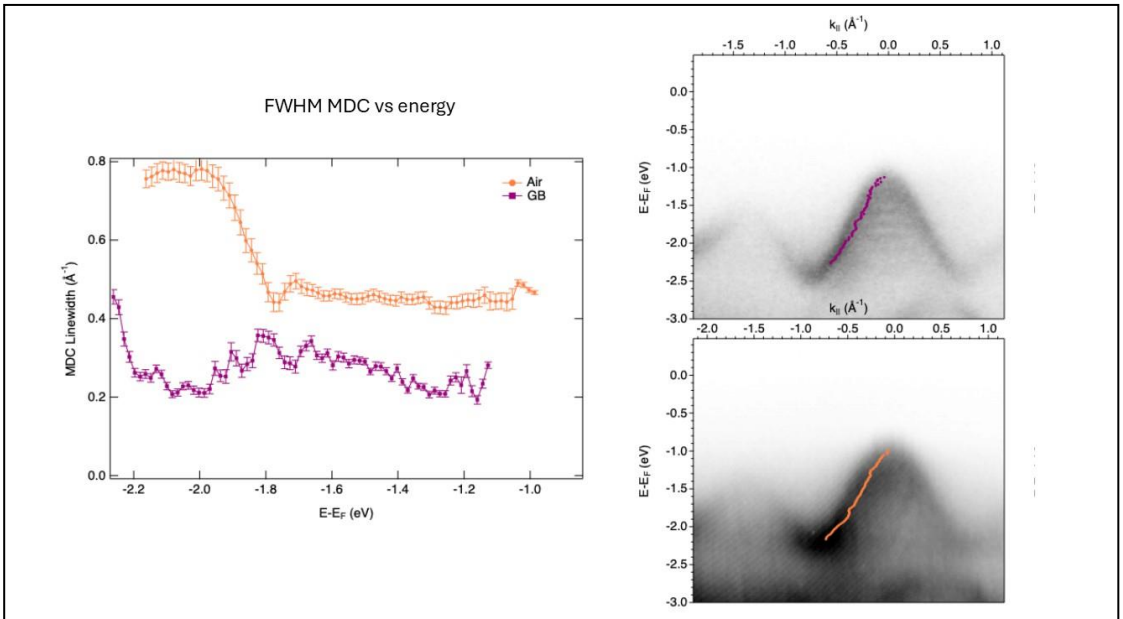

Figure S1: FWHM of the MDC bands in the 1.0-2.2 eV BE range (left); electronic band dispersion with the fitting points (right).

1 P.F. Buitrago, S. Montoro, R. Vidal, F. Bonetto, *Vacuum*, 2024, **229**, 113586.
2 P. Afanasiev and C. Lorentz, *J. Phys. Chem. C*, 2019, **123**, 7486.