

Positron annihilation investigation of thermal cycling induced martensitic transformation in NiTi shape memory alloy

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Supplement

Figure S1 shows the one-component positron lifetime τ_{1C} measured with spectrometer B for state C1500 (NiTi alloy thermally cycled from 50 °C to -196 °C 1500 times) during natural ageing at ‘room temperature’ (~20°C). The purpose was to verify that all the positron lifetimes measured at ‘room temperature’ are actually constant during the measurements that typically take a few hours. If free vacancies had been created during cycling these might have annealed out at ‘room temperature’ and influenced the signal. The value for τ_{1C} shows some fluctuations on the scale of ≤ 1 ps and just a very slight tendency to increase but this is rather due to electronic instabilities so that during room temperature ageing the samples can be considered stable. Therefore, annealing out of vacancies can be neglected.

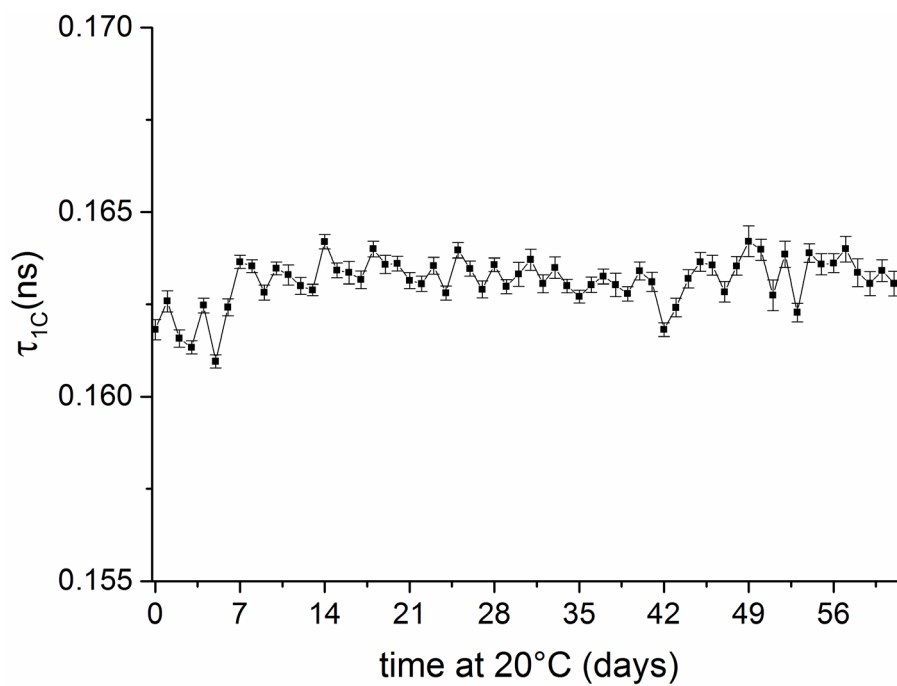


Figure S1. One-component τ_{1C} of sample C1500 stored at 20°C for ~2 months.