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Supplementary: On the Change in UO_2 Redox Reactivity as a Function of H_2O_2 Exposure

Received 00th January 20xx, Accepted 00th January 20xx DOI: 10.1039/x0xx00000x Annika Carolin Maier,^{+a} Philip Kegler,^b Martina Klinkenberg,^b Angela Baena,^b Sarah Finkeldei,^b Felix Brandt,^b and Mats Jonsson^a

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The pellets were compacted at different pressures, which results in slight differences in the density reported in Table 1.

Pellet ID	Pressure (MPa)
P1	255.00
P2	318.75
Р3	382.50
P4	446.25
Р5	510.00

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BSE- SEM image of P1(A) and P5 (B) and segmented pores by image analysis (c+d) for the respective samples used in the experimental section



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In this section the raw data of H_2O_2 consumption as well as U(VI) release for all pellets used in this study are shown. It should be noted that raw data is not corrected for the background consumption of H_2O_2 .



2.5 2 Exposure 1 Exposure 2 Exposure 3 Exposure 3 Exposure 3 0 0 0 50 100 150 200 250 Time / h	6 5 5 6 5 6 6 6 7 0 1 0 0 5 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 1 0 1 1 0 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1
H ₂ O ₂ consumption on pellet P5 for three consecutive exposures	Uranium release from pellet P5 during three consecutive exposures to H ₂ O ₂