## Hydrothermal aging of Pd/LTA monolithic catalyst for complete CH<sub>4</sub> oxidation

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Figure S1. SEM images of a) PdLTA and b) PdAl.



Figure S2. Original figure, without removal of CH<sub>4</sub> spikes due to water condensation, corresponding to Figure 4. Isothermal CH<sub>4</sub> oxidation activity test at 450 °C for a) PdLTA and b) PdAl that had been degreened or aged at 700, 800 or 900 °C. White areas correspond to wet reaction mixture (500 ppm CH<sub>4</sub>, 8% O<sub>2</sub> and 5% H<sub>2</sub>O). Grey areas represent wet reaction mixture modified according to the text in each grey box.



Figure S3. Original figure, without removal of CH4 spikes due to water condensation, corresponding to Figure 5. Temperature programmed CH4 oxidation activity test during heating 5 °C/min for a) PdLTA and b) PdAl, which had been degreened or aged at 700, 800 or 900 °C. Note that this activity test followed directly after the isothermal activity in Figure 5 (without pre-treatment in between). The entire test was performed in wet reaction mixture (500 ppm CH4, 8% O2 and 5% H<sub>2</sub>O).