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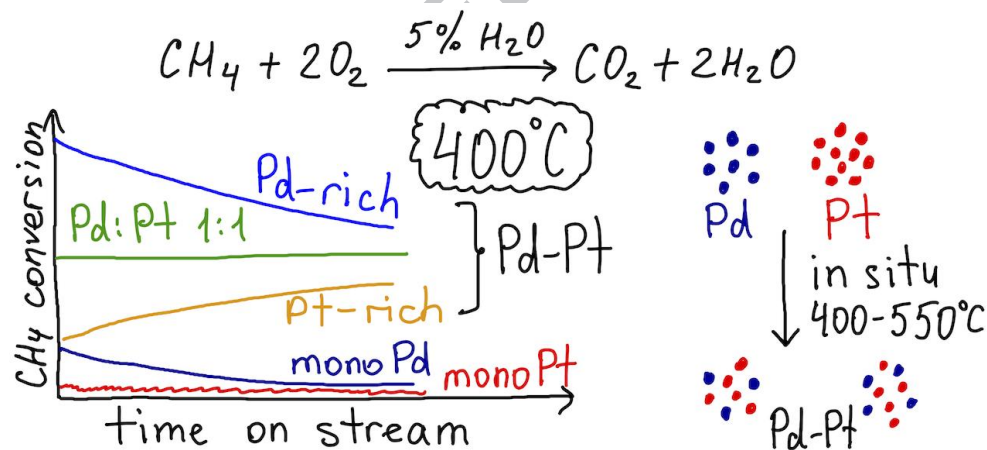


**Stability of Pd-Pt catalysts in low-temperature wet methane combustion:****Metal ratio and particle reconstruction**

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*Department of Chemical and Materials Engineering, University of Alberta, 9211 – 116 St.,**Edmonton T6G 1H9 Canada. Corresponding author: [semagina@ualberta.ca](mailto:semagina@ualberta.ca)***Research Highlights**

- Pd-Pt catalysts with 1:5 to 5:1 ratio were studied in wet lean methane combustion.
- Hydrothermal ageing tests were performed for 40 hours at 400-550 °C.
- The optimal combination of activity and stability is a Pd:Pt 1:1 (atomic) ratio.
- Significant structural changes occur in situ, even at such low temperatures.

**Graphical Abstract**

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