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Enhancement of NO_x and hydrocarbon conversion in plasma-activated catalysis BILL GRAHAM, WAHMEED ADRESS, Centre for Plasma Physics, ALEXANDRE GOGUET, HUI YANG, FABIO DE ROSA, CHRISTOPHER HARDACRE, CRISTINA STERE, CenTACat, Queens University Belfast, N. Ireland, U.K — Atmospheric pressure, non-thermal plasma-activated-catalysis is showing real promise in a number of applications. Here we report on how electrical, visible and FTIR spectroscopy and mass spectroscopy measurements in a kHz atmospheric pressure He plasma jet coupled with a Ag/Al_2O_3 catalyst allowed us produce and confirm a strong enhancement of both NO_x and hydrocarbon conversion at a measured gas temperature of $\leq$250 C [1]. How these and other measurements have provided an insight into the fundamental physical and chemical processes in the plasma environment that have helped us move to a more efficient system and other processes will be discussed. [1] Stere C E, Adress W, Burch R, Chansai S, Goguet A, Graham W G, De Rosa F, Palma V and Hardacre, C. ACS Catalysis **4** (2014) 666-673

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