Recently, research on combustion micro power generators has received significant attention due to the increasing demands for microelectromechanical systems [1]. Thermal and radical quenching at the walls decrease flame stability in microcombustors. Nonequilibrium plasma is a promising tool for flame stabilization [2]. Production of radicals, fast gas heating and use of catalyst provide an opportunity to increase the stability of combustion on a microscale. The goal of PhD study is to develop the approach allowing stable microcombustion with the use of plasma/catalyst.

References:
[1] B. Aravinda, B. Khandelwal, P.A. Ramakrishna, S. Kumar, 2020, Towards the development of a high power density, high efficiency, micro power generator, Applied Energy 261, 114386