Turquoise hydrogen: the potential for combined hydrogen and carbon production via methane cracking

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Abstract:

The combined production of hydrogen and carbon from methane without CO2 production could be a game changer related to clean hydrogen production. In this presentation, the focus will be on describing the pyrolysis and the plasma based technology options. A clear overview will be presented on the pros and cons of the different methodologies and compared with other clean hydrogen options. In particular, the merits and challenges of molten metal based pyrolysis of methane will be discussed. At TNO, the largest independent contract research organization of the Netherlands, we have a strong background in molten metal based pyrolysis of methane. The latest data related to cracking efficiency and scale-up potential will be given. The results demonstrate that cost effective hydrogen and carbon production is possible, at a significant lower cost than competitive green routes.