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Hydrogen production by photo-pyrolysis of biomass and wastes

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PURPOSE OF THE ABSTRACT

We present here high-power anaerobic pyrolysis of dry biomass and wastes such as rubber tyre using a high power Xenon flash lamp. The process occurs at room temperature and pressure, but very high temperatures can be reached during few microseconds upon flash irradiation enough to completely pyrolyse biomass powders.
With very fine powders, only a syngas composed of H2 & CO is produced together with a porous solid carbon. With coarser materials, oil may be produced.
The different aspects of this novel technique will be presented and the different applications discussed. All in all, this process provides a carbon capture strategy whilst producing hydrogen based fuels.

FIGURES

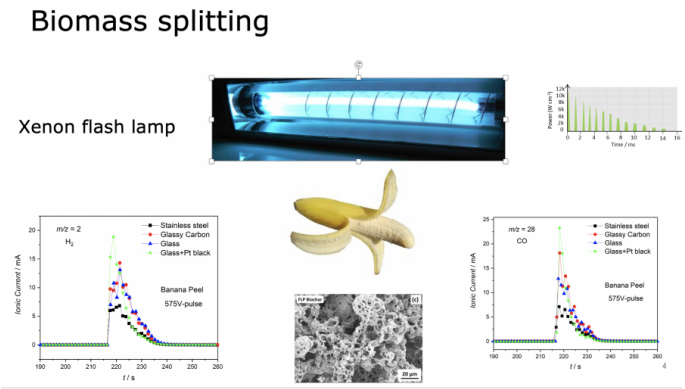

FIGURE 1

Biomass Photo-Pyrolysis

Photo production of syngas from banana waste

FIGURE 2

KEYWORDS

hydrogen | carbon capture | Xenon lamp | Pyrolysis

BIBLIOGRAPHY

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