

LOW TEMPERATURE MICROWAVE DRIVEN CARBON STEAM REACTION.
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A world thriving on oil coupled with the uncertain future of sustainability has pushed industry for many years to find alternative means of producing hydrocarbons. Carbon is a fundamental building block and reactions using carbon represents fundamental research in the area a C1 chemistry. The carbon steam reaction is a precursor to the coal gasification process that is usually done at high pressure and high temperatures. In a microwave field we are able to observe the analog reaction between carbon and water to produce H₂ and CO at low temperatures and at atmospheric pressures without the need of a catalyst. Here we discuss power dependence on the production of the product gases and our homemade system design for the introduction of water to the carbon hot bed.