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- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

(54) Title: METHODS AND SYSTEMS FOR IMPROVING THE EFFICIENCIES OF POWER AND OTHER INDUSTRIAL PROCESS PLANTS

(57) Abstract: This present invention describes methods and systems for integrating liquid-phase, electrochemical and chemical processes into power generation, petrochemical, metal, cement and other industrial process plants, in such a manner as to capture and recycle all input carbon into cost-competitive hydrogen, oxygen and hydrocarbons. These integrated systems will recover internally generated losses in chemical potential (AG Gibbs Free or Available Energy) as well as waste heat (ΔH - Enthalpy), and sometimes electricity, to assist in driving these electrochemical and chemical processes, which will increase the total useful output of the process plants, thereby increasing thermal, carbon and economic efficiency.



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