Wind-less oxidation heat generation

This study proposes an effective thermal recycling strategy for glass fibers recovered from waste wind turbine blades, combining pyrolysis with subsequent oxidation.

Thermally induced chemical decomposition of organic materials in the absence of oxygen is defined as pyrolysis.

Pyrolysis offers a straightforward method to extract valuable glass fiber from retired wind turbine blades, showing great potential for resource utilization. Experimental findings reveal that ...

Concentrating solar technologies can be used to generate electricity and process heat from sunlight, with the capability to store energy for use at night or when insolation is low.

A wind/biomass hydrogen generation system is considered a suitable method for electricity,heat,and methanol production,with an efficiency of 40.96 %. The results show that the system can produce ...

Wind-less oxidation power generation (WOPG) emerges as a game-changing solution, particularly for coal mines emitting low-concentration methane through ventilation air.

Flameless oxidation enables to achieve very low pollutant emissions even at high combustion chamber and air preheat temperatures and by doing so allows higher efficiencies with low impact on the ...

Several proposed techniques, including mechanical, thermal, and chemical processes, have been considered for wind-blade recycling, but determining the most effective approach remains ...

The operational principle is that the high-temperature oxidation of iron fuel can release considerable heat for power generation without CO 2 emissions, and the iron oxides ...

An experimental method involves the oxidation of metal particles in steam to simultaneously generate heat

and hydrogen. The first proof of this concept, which shows the full ...

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