

Title (en)
PROCESS OF OBTAINING ZEOLITE CATALYSTS CONTAINING METAL BY MICROWAVE- AND ULTRASONIC-ASSISTED HYDROTHERMAL SYNTHESIS

Title (de)
VERFAHREN ZUM ERHALTEN VON METALLHALTIGEN ZEOLITKATALYSATOREN DURCH MIKROWELLEN- UND ULTRASCHALL-UNTERSTÜTZTE HYDROTHERMISCHE SYNTHESE

Title (fr)
PROCESSUS D'OBTENTION DE CATALYSEURS À ZÉOLITE CONTENANT UN MÉTAL PAR SYNTHÈSE HYDROTHERMIQUE ASSISTÉE PAR MICRO-ONDES ET PAR ULTRASONS

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Abstract (en)
[origin: WO2021107801A1] The present invention relates to a process of obtaining metal-containing zeolite catalysts, by microwave and ultrasonic assisted hydrothermal synthesis, at various operating frequencies, catalysts for use in biomass pyrolysis processes and other carbon-containing materials. The process of the invention comprises the following steps: microwave application to a reaction mixture obtained by dispersing a zeolite in an aqueous medium to which a metal precursor is first added and subsequently a reducing agent, at a temperature in the range from 30°C to 75°C for a maximum of 30 minutes followed by cooling the resulting reaction mixture to room temperature and then ultrasonic application to the reaction mixture for a maximum of 30 minutes, after which separation of the reaction product obtained in solid form from the liquid phase, optionally washing and then calcination is performed. The process of the invention can be dimensioned and applied industrially using the two types of industrial microwave frequencies of 2.45 GHz and 915 MHz, and an ultrasound regime with an amplitude of 80% and a frequency of 30 to 90 KHz.

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