



TECHNOLOGY

INTEGRATED THERMOCHEMICAL PROCESS FOR THE COMBINED RECOVERY OF CARBON AND PHOSPHORUS AND RAW MATERIALS FROM RESIDUAL MATRICES

ABSTRACT

RE-CORD developed and patented an integrated process based on slow pyrolysis and chemical leaching for the conversion of residual organic matrices into biocarbon and inorganic fertilizer. The process consists of pre-processing the biogenic material via slow pyrolysis, where bioenergy and char are produced. Then, the char is processed via chemical leaching. This treatment, performed following a patented set of optimized conditions, allows the extraction of inorganic material from the char, producing biocoal with a reduced ash content and an inorganic fertilizer rich in phosphorus and nutrients. The phosphorus extraction achieved efficiencies greater than 95% for all tested materials, including sewage sludge.



The technology has been applied with TRL 5 in a pilot unit of 50 lt (picture) and a new multi-batch unit at TRL 7, of 500 lt/h capacity is under construction.

REFERENCES

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