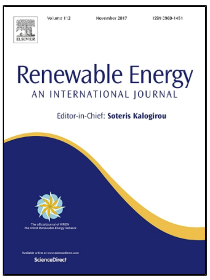
Accepted Manuscript



Effect of microwave pretreatment on semi-continuous anaerobic digestion of sewage sludge

A. Gil, J.A. Siles, M.A. Martín, A.F. Chica, F.S. Estévez-Pastor, E. Toro-Baptista

PII:	S0960-1481(17)30740-1
DOI:	10.1016/j.renene.2017.07.112
Reference:	RENE 9087
To appear in:	*Renewable Energy*
Received Date:	04 February 2017
Revised Date:	07 July 2017
Accepted Date:	27 July 2017

Please cite this article as: A. Gil, J.A. Siles, M.A. Martín, A.F. Chica, F.S. Estévez-Pastor, E. Toro-Baptista, Effect of microwave pretreatment on semi-continuous anaerobic digestion of sewage sludge, *Renewable Energy* (2017), doi: 10.1016/j.renene.2017.07.112

EFFECT OF MICROWAVE PRETREATMENT ON SEMI-CONTINUOUS ANAEROBIC DIGESTION OF SEWAGE SLUDGE

Gil, A.[1], Siles, J.A.[1], Martín, M.A.[1*], Chica, A.F.[1], Estévez-Pastor, F.S.[2], Toro-Baptista, E.[2]

[1]Department of Inorganic Chemistry and Chemical Engineering, University of Cordoba. Campus Universitario de Rabanales, Edificio Marie Curie (C-3). Ctra. N IV, km 396. 14071 Cordoba, Spain.

[2]Empresa Metropolitana de Aguas de Sevilla, S.A. (EMASESA). C/ Escuelas Pías,1, 41008 Sevilla.

*Corresponding author: Telephone: (+34) 957 212273; email: iq2masam@uco.es

Nomenclature

Alk	Alkalinity
COD	Chemical oxygen demand
EPS	Extracellular polymeric substances
FID	Flame ionization detector
FS	Fixed solids
GAL	Synthetic solution composed of glucose, sodium acetate and lactic acid
HRT	Hydraulic retention times
IC	Inorganic carbon
MSS	Microwaved sludge substrate
$N\text{-}NH_4^+$	Ammoniacal nitrogen
OLR	Organic loading rate
SCOD	Soluble chemical oxygen demand
STN	Soluble total nitrogen
STOC	Soluble total organic carbon
STP	Standard temperature and pressure conditions
TCOD	Total chemical oxygen demand
TS	Total solids
TVS	Total volátil solids
$TVS_{initial}$	Initial total volatile solids
$TVS_{remaining}$	Remaining total volatile solids
VA	Volatile acidity
VFA	Volatile fatty acids
WMSS	Unpretreated sewage sludge
WWTP	Wastewater treatment plants