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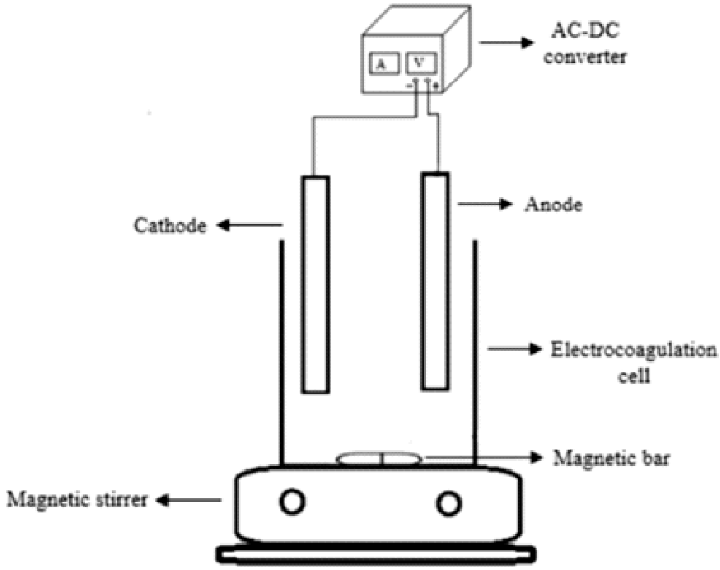
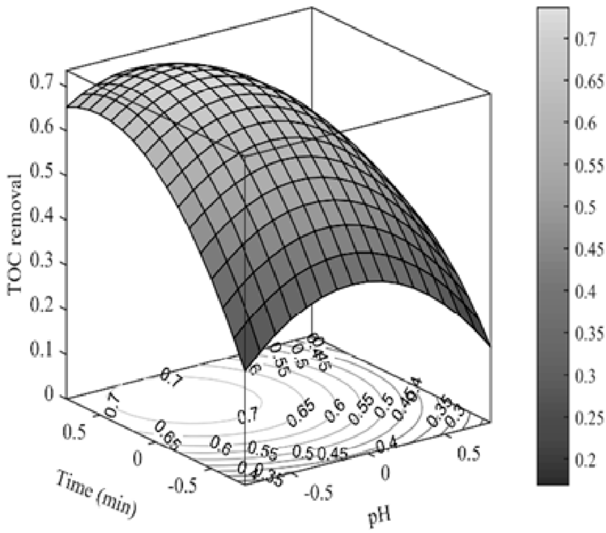
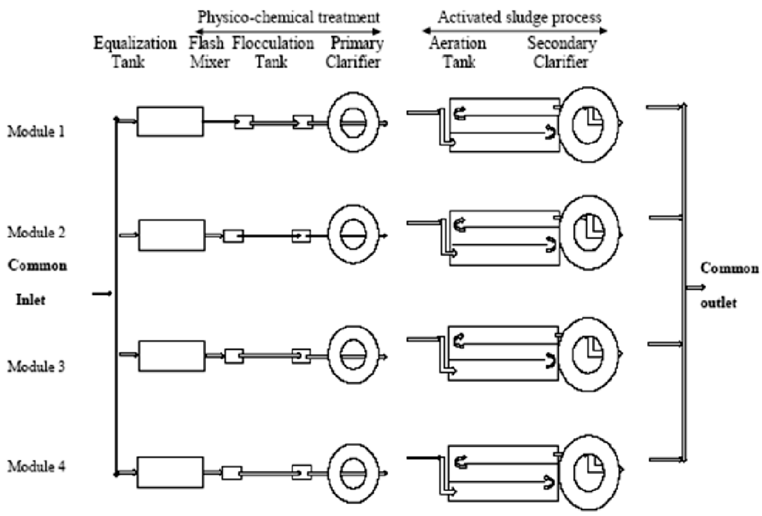
C O N T E N T S



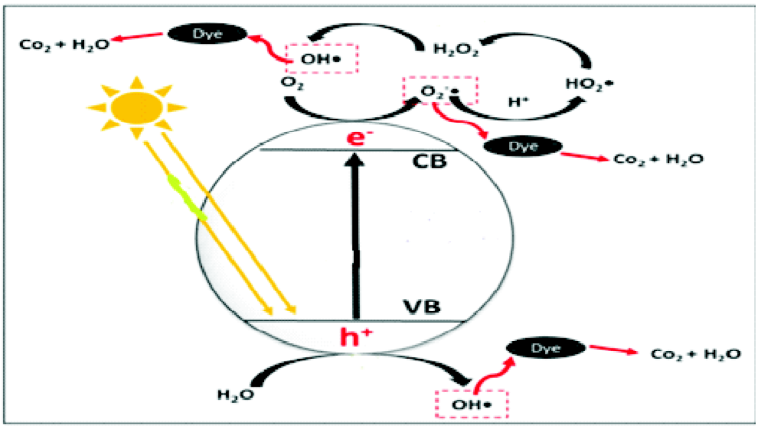
Schematic diagram of experimental set-up for electro-coagulation system



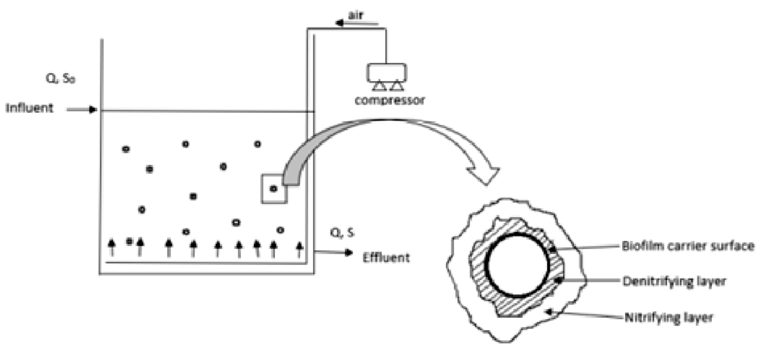
Interaction of pH vs time



Flow sheet diagram of CETP at CLC



Schematic illustration of photocatalytic degradation of dye molecule (Chiam *et al*., 2020)

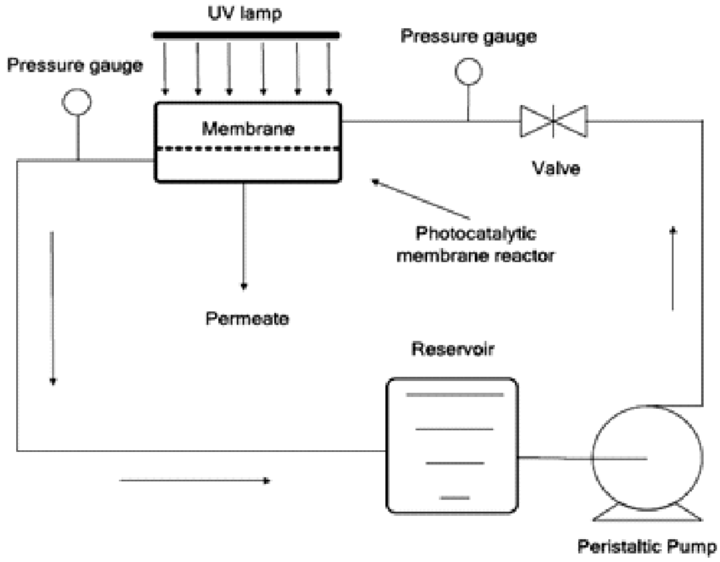


Schematic representation of an aerobic MBBR and attachment of biofilm to a typical carrier

Advances in engineered design and performance of photocatalytic membrane reactor for polluted water treatment

S. R. Harsha and Ambika Selvaraj

pp. 2750-2757

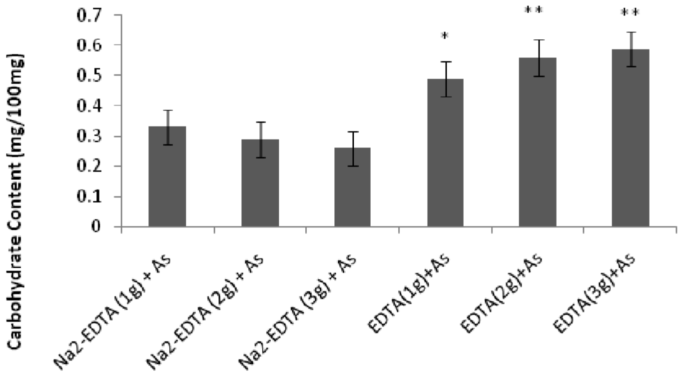


A immobilized photocatalyst reactor with TiO_2 photocatalysts

Impact of soil addendum on arsenic uptake by rice plant in the alluvial soil of gangetic West Bengal, India

Sonali Paul, Rupshali Dey, Ipsita Sarkar, Ankit Chakraborty and Susmita Mukherjee

pp. 2758-2764

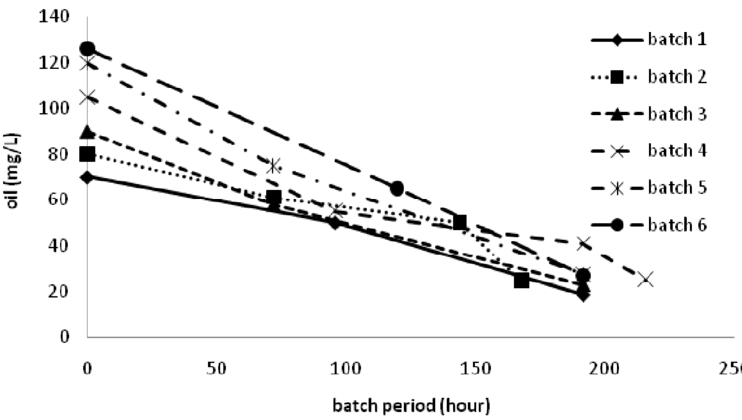


Carbohydrate content in the plants cultivated with EDTA and DSEDTA

Kinetic study of anaerobic suspended growth reactor for the treatment of oily wastewater

P. Sanghamitra, Debabrata Mazumder and Somnath Mukherjee

pp. 2765-2770

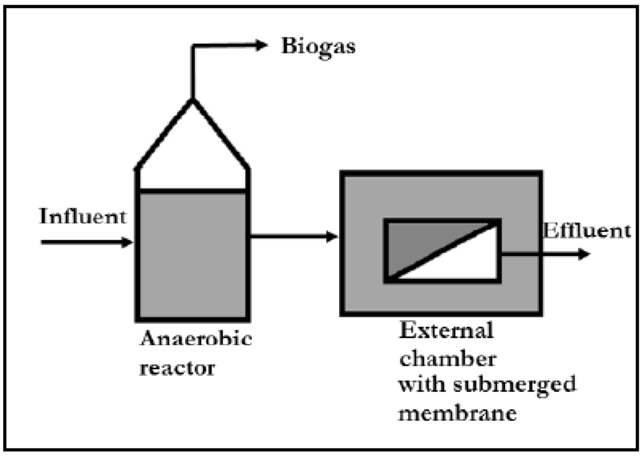


Trend of oil during batch study in anaerobic suspended growth reactor

Scope of aerobic and anaerobic membrane bioreactor in industrial wastewater treatment

Soumyadeep Bhaduri and Debabrata Mazumder

pp. 2771-2776

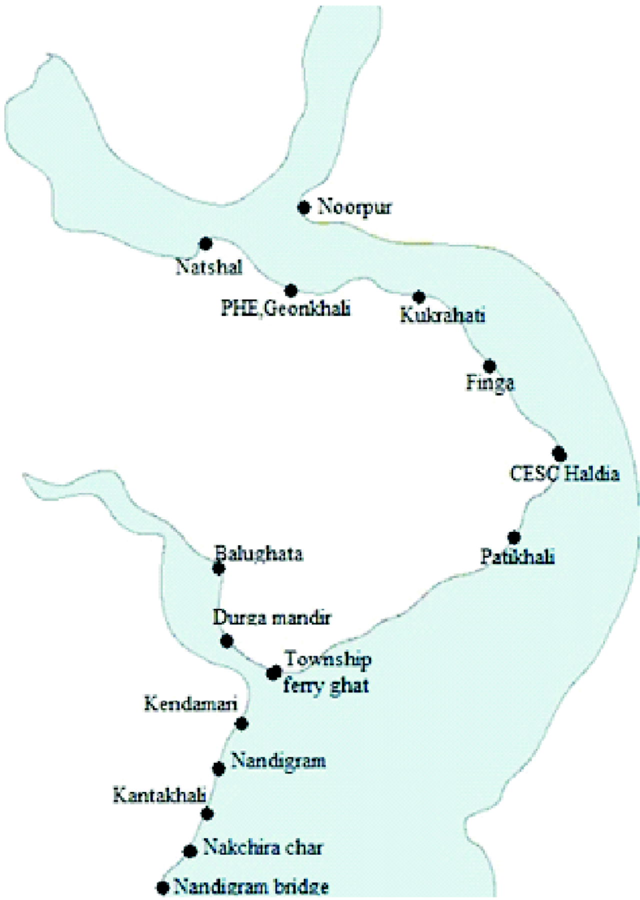


External submerged membrane bioreactor

Water quality assessment of lower Ganga river near Haldia applying water quality index method

Sayan Pradhan, Gourab Banerjee, Arunabha Majumder and Asis Mazumdar

pp. 2777-2782

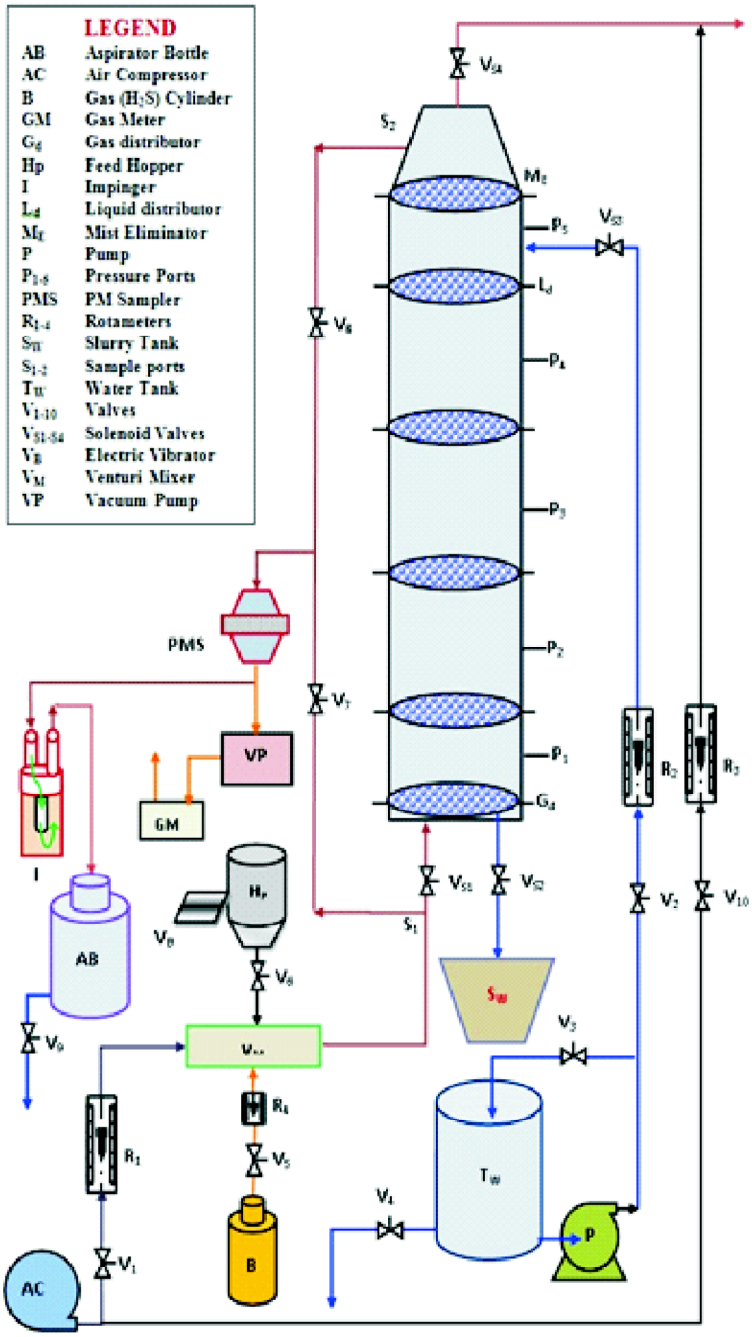


Sampling points in study area

Optimization of process variables for particulate laden H_2S removal from gasifier syngas in a multistage dual-flow sieve plate scrubber

Kurella Swamy and B. C. Meikap

pp. 2783-2790

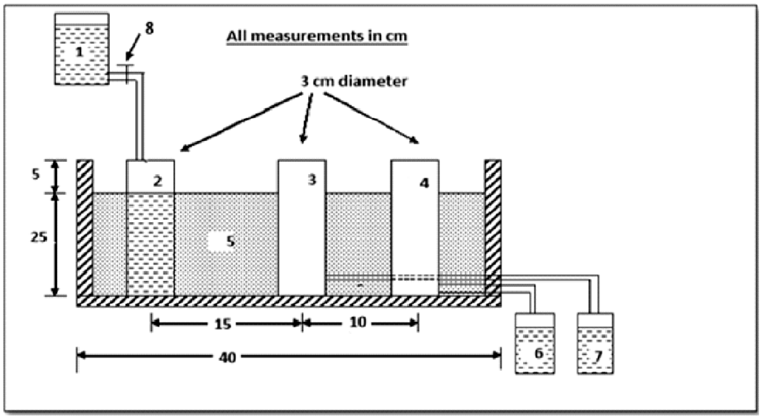


Schematic diagram of multistage dual-flow sieve plate column scrubber

Assement of the migratory behaviour of contaminant originating from tannery waste water through amended clay liner using HYDRUS-3D solute transport model

C. Bhadra, S. Pal and K. Adhikari

pp. 2791-2799



Laboratory experimental setup used for the Cr(VI) migration test. 1 - Synthetic Cr(VI) solution; 2 - Solution Injection well; 3 - Observation well no. 1; 4 - Observation well no. 2; 5 - Compacted amended clay soil; 6 - Effluent of the Cr(VI) solution from Observation well no. 2; 7 - Effluent of the Cr^{6+} solution from Observation well no. 1; 8 - Adjustable valve

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A review on the occurrence and treatment of methylpyridine: An industrial solvent

Rajat Chatterjee and Chanchal Majumder

pp. 2800-2804

S.No.	Type of pathway	Location/ Source	2Mp concentration	Comment	Reference
1	Industry workers	Shale oil processing wastewater	5 - 25 mg/L	It is used as a cleaning agent	27
2	Fisheries	Korean fish pastes	146 μg/kg	Exceeds limits by a large margin.	28
3	Waterbodies	Coal gasification wastewater	3.71 mg/L	-	29
4	Waterbodies	Low temperature carbonization wastewater	5 mg/L	Mean concentration from 10 samples	30
5	Waterbodies	Tar plant drainage wastewater	54 mg/L	Highest concentration of 2Mp observed	7
6	Sub-surface soil	Wood works wastewater	0.91 mg/L	At depth of 6 m	31

Case studies elucidating the different pathways of 2 Mp exposure

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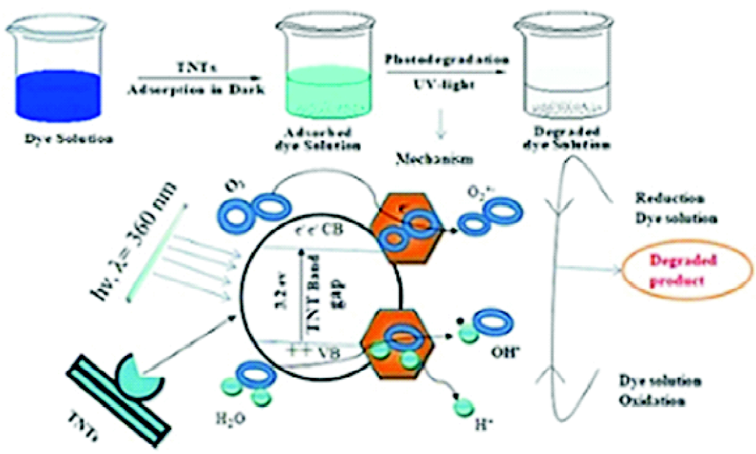
Exclusion of crystal violet and methylene blue from wastewater using titanate nanotube: Kinetics of the adsorption and photodegradation

Saismrutiranjan Mohanty, Sanjib Moulick, Shuvendu Singha and Sanjoy Kumar Maji

pp. 2805-2813



Probable dye adsorption and photodegradation mechanism

Exploring the adsorption and desorption characteristics of lead(II) ions from synthetically contaminated wastewater by anionic surfactant modified neutral alumina

Anish Ranjan Ghosh, Subhadeep Biswas, Ashish Kumar Nayak and Anjali Pal

pp. 2814-2819

Freundlich isotherm			
$1/n$	K_F (mg/g (L/g)$^{1/n}$)	R^2	χ^2
0.317	6.62	0.990	0.04
Langmuir isotherm			
q_m (mg/g)	K_L (L/mg)	R^2	χ^2
30.3	0.07	0.959	0.17

Isotherm constants for removal of Pb(II) on SMA

A review of phenol removal from wastewater by adsorption

Sayak Chakravorty, Rajat Chatterjee and Chanchal Majumder

pp. 2820-2823

S. No.	Name of adsorbent	Concentration range of phenol (mg/L)	pH of maximum removal	Contact time of equilibrium (min)	Optimal Temperature (degree Celsius)	Optimal Adsorbent dose (g/L)	Adsorption Capacity (mg/g)	Reference
1	Tire Char	50 – 250	5.5	1440	25	-	30.20	12
2	Polygonum Orientale Linn	50 – 150	9	120	25 – 30	20	-	6
3	Low Cost Clay	100 - 300	2	-	50	2	30.32	13
4	Modified Clay	-	7	360	20 – 40	4	18.8	14
5	Pomegranate Peel Carbon	10 – 100	7	120	23 ±2	0.6	148.38	15
6	Chitosan & Chitin	30	6	1440	28±2	-	1.96 & 1.26	16
7	Pine Bark Powder	100 – 400	7	120	25±1	4	143.3	17
8	Coffee Residue	10 – 170	-	60	20 – 40	-	67% removal	9
9	Petroleum Asphaltenes	0 – 200	7	-	25	-	127.32	20
10	Composite Hydrogels	100 - 500	7	120	25	-	213.5	19

Adsorbents used in removal of phenols along with removal conditions studied

Development of a comprehensive model and evaluation of kinetic coefficients for treating slaughterhouse wastewater in a single stage anaerobic bioreactor

R. Loganath and Debabrata Mazumder

pp. 2824-2832

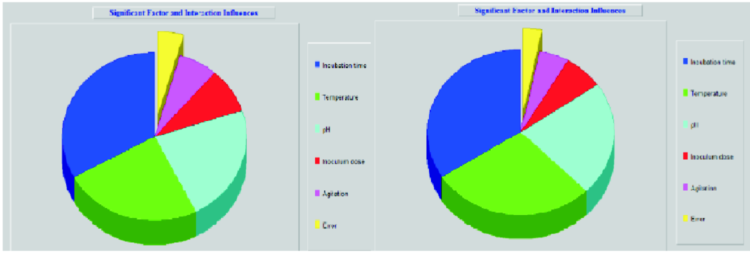
Kinetic Coefficients	For Hydrolysis	For Acidogenesis	For Methanogenesis
k (d^{-1})	0.606	0.795	0.828
K_s (mg/L)	192.29	154.63	157
Y (mg/mg)	0.069	0.08	0.09
k_d (d^{-1})	0.006	0.005	0.007

Values of bio-kinetic coefficients for anaerobic reactor treating slaughterhouse wastewater

Parametric optimization by Taguchi orthogonal array methodology for enhanced biodegradation of 4-chlorophenol by an isolated bacterial consortium

Priyanka Sarkar and Apurba Dey

pp. 2833-2839



Pie chart indicating the significant factors influencing (a) the biomass growth and (b) 4-CP biodegradation

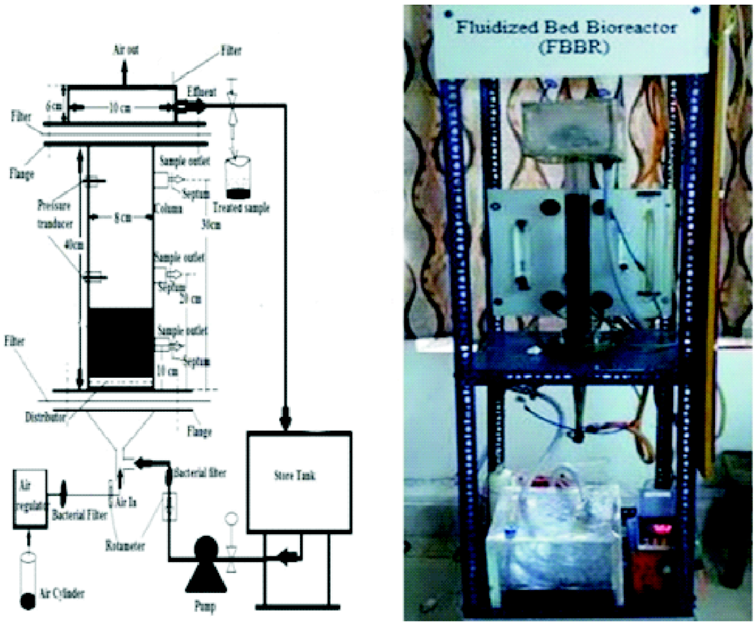
Co-digestion of organic fraction of municipal solid waste (OFMSW) and industrial organic solid waste

Penaganti Praveen and Debabrata Mazumder

pp. 2840-2846

Substrate type and Mixing ratio	Reactor type	Operational Conditions	Biogas/Methane Yield	TVS removal%	Reference
OFMSW:SS 54:46(TVS basis)	CSTR	Mesophilic, 1.9 kg TVS/m^3.d, 22 d HRT	0.395 m^3 CH_4/ kg TVS_{added}	70	24
OFMSW:SS 5:1(TS basis)	Dry batch	55 °C, C:N 31, 20% TS	0.051 m^3 H_2/ kg $TVS_{removed}$&36% H_2 conc.	-	47
OFMSW: WAS 75: 25(volume ba sis)	Batch	35 °C, 4.2% TS	0.376 m^3 CH_4/ kg TVS_{added}& 140% better yield than control	61	48
OFMSW: SS 20:80 (TVS basis)	CSTR	37 °C, 1.0 kg.VSS/m^3.d OLR	0.60 m^3 biogas/ kg VSS& 1.54 times greater CH_4 yield	-	50
OFMSW:Fruit and vegetable waste 1:3 (VS basis)	Batch	35 °C,18.9% VS, C:N34.7	0.397 m^3 CH4/kg TVS& 141% rise in CH_4 yield than OFMSW only	54.6	51
OFMSW: FW 80:20 (TS basis)	SSTR	55 °C, 20% TS, 1.9 d HRT, 66 kg.TVS/m^3.d OLR	38 mL H_2/g TVS_{added}& 2.5 L H_2/$L_{reactor}$.d& 44% H_2 fraction in biogas	-	42
OFMSW: FW	CSTR	35 °C, OLR 3 g VS g^{-1}.d^{-1}	0.49 m^3 CH_4 kg^{-1}VS_{added}	74.9	54
OFMSW-SHW 10:1(dry wt. basis)	CSTR	34 °C, 3 d HRT	71.3 L H_2/kg $TVS_{removed}$&27.5% H_2 in biogas, 34 °C, 15d HRT	47.9	55
OFMSW-SHW 80:20(weight Basis)	CSTR	38 °C, 21 d HRT,4 kg TVS/m^3 OLR	35% increase in biogas yield	69.7	56

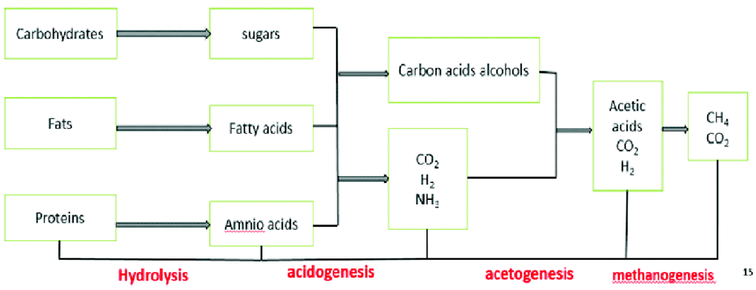
Results of co-digestion of OFMSW with some industrial organic solid wastes



Experimental setup

S.No.	MOF	pH	Adsorbent dose (g)	Temperature (K)	Contact time (min)	Concentration fluoride (mg/l)	Adsorption capacity (mg/g)	Reference
1	Zr	5	.05-.25	303	30	10	4.920	[25,26]
2	Fe	6	.6964	298	10	10	40.42	[27,32]
3	Al	7	1.5	293	20	30	600	[32]
4	La	-	-	298	-	3.68	4.9	[33,34]
5	Ce	6	.59	298	20	10	38.65	[35]

Optimum values of parameter which affect the fluoride adsorption



Mechanism of anaerobic treatment

Degradation of recalcitrant compounds from the industrial effluents by Fenton-based approaches: A review

Mohd Salim Mahtab, Izharul Haq Farooqi and Anwar Khursheed

pp. 2864-2866

$$Fe^{2+} + H_2O_2 \rightarrow Fe^{3+} + \bullet OH + OH^- \quad (1)$$

$$Fe^{3+} + H_2O_2 \rightarrow Fe^{2+} + HO\bullet_2 + H^+ \quad (2)$$

$$Fe^{3+} + H_2O + h\nu \rightarrow Fe^{2+} + H^+ + \bullet OH \quad (3)$$

$$Fe^{3+} + e^- \rightarrow Fe^{2+} \quad (4)$$

$$Fe^{III}\,(OOH)^{2+} +))) \rightarrow Fe^{2+} + \bullet OOH \quad (5)$$

Reactions of Fenton process