Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary material

Performance and characterization of non-sintered -zeolite porous filter for the simultaneous removal of nitrogen and phosphorus in a biological aerated filter (BAF)

Teng Bao[a,b], Tianhu Chen[a*], Marie-Luise Wille[c], Dong Chen[a], Wentao Wu[a], Ray L. Frost[b]**

[a]Laboratory for Nanominerals and Environmental Material, School of Resource and Environmental Engineering, Hefei University of Technology, China.

[b]School of Chemistry, Physics and Mechanical Engineering, Science and Engineering Faculty, Queensland University of Technology, Australia.

[c]Institute of Health & Biomedical Innovation, Queensland University of Technology, Brisbane, Australia.

[*]Author to whom correspondence should be addressed: TianhuChen,chentianhu@hfut.edu.cn.; Ray L. Frost, r.frost@qut.edu.au

List of Figures

Figure S1. Photographs of ZPF and CAC samples.

A, CAC; B, ZPF

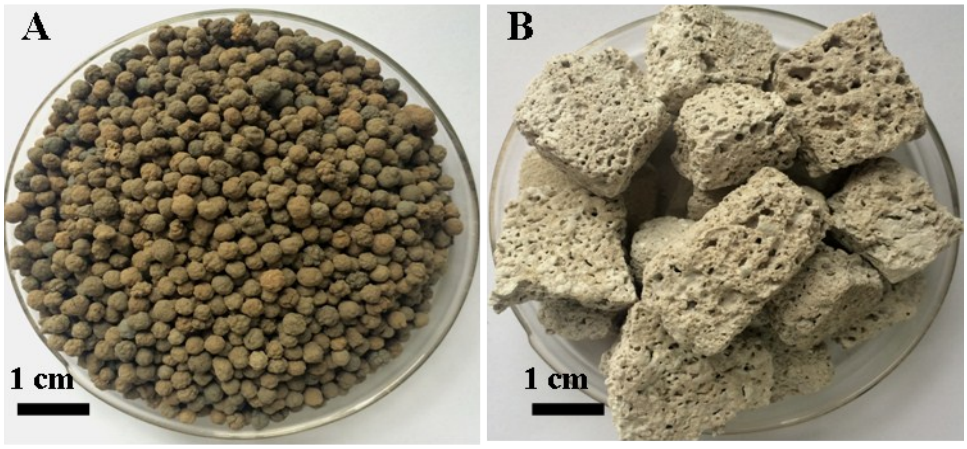
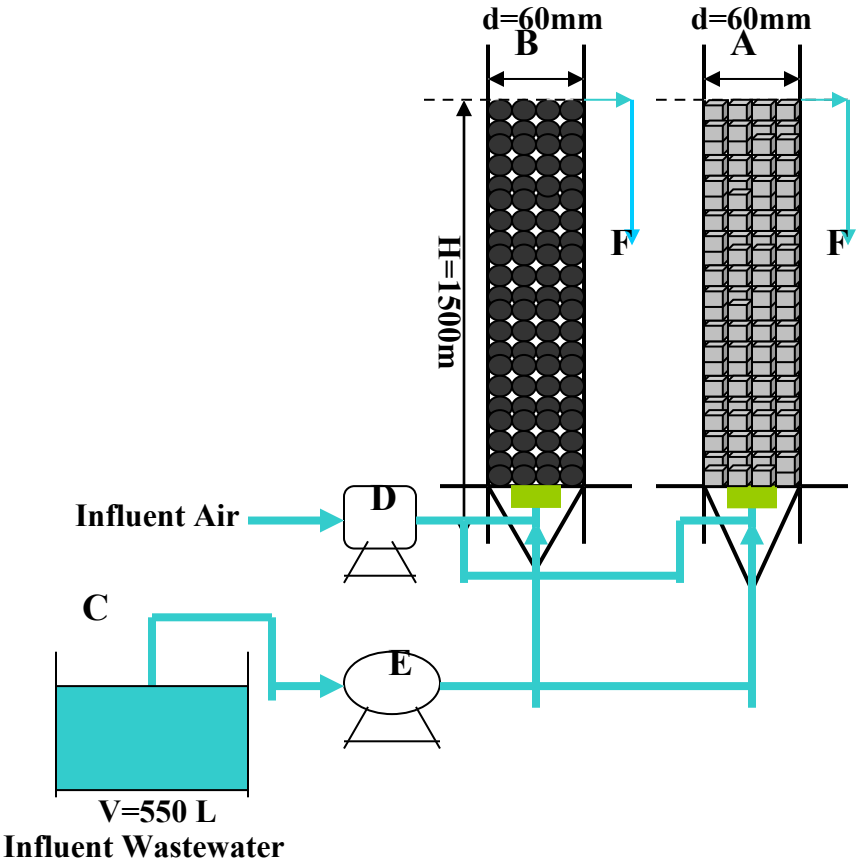


Figure S2. Schematic diagram of experimental set-up.

A- ZPF BAF; B- CAC BAF; C- Wastewater tank; D- Air blower;

E- Water pump; F-Effluent pipe;



List of Tables.

Table. S1. The composition of raw materials (%)

Chemical composition of raw materials (wt %)					
	Zeolite		CAC		Cement
SiO_2	76.02	SiO_2	60.24	SiO_2	26.63
Al_2O_3	11.27	Al_2O_3	17.94	Al_2O_3	6.12
Fe_2O_3	1.05	Fe_2O_3	13.16	Fe_2O_3	1.76
K_2O	2.50	K_2O	2.46	Mn_2O_3	0.41
CaO	2.54	CaO	0.41	TiO_2	0.13
MgO	0.98	MgO	1.62	CaO	60.32
Na_2O	0.35	TiO_2	1.79	MgO	1.43
-----	------	Na_2O	0.97	P_2O_5	0.21
-----	------	MnO	0.33	SO_3	1.97
-----	-------	CuO	0.40	K_2O	0.72
------	-------	P_2O_5	0.18	Na_2O	0.16
------	-------	ZrO_2	0.13	------	------
-------	-------	Cr_2O_3	0.06	------	------
CAC – Commercially available ceramsite;					