

## *Supplementary material*

# Composite polysilicate metal coagulants for simultaneous removal of organic matter, phosphorus, and ammonium-nitrogen: effects of metal/silicate molar ratio and basicity

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### **1. Determination of floc size at the end of coagulation.**

At the end of coagulation process, the floc sizes of CSM (M/Si = 2:1, 3:1, and 4:1), PSiA, and PFS were determined using small-angle-laser light-scattering (SALS) equipment (Mastersizer 2000; Malvern, UK).

**Table S1.** Comparison of coagulation performance between CSM and traditional coagulants(FeCl<sub>3</sub> and Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>) at the same dosage (80 mg/L)

NO.	Coagulants	Removal efficiency (%)			
		SS	COD	PO <sub>4</sub> <sup>3-</sup> -P	NH <sub>4</sub> <sup>+</sup> -N
1	CSM (M/Si=3:1)	96±2	64±3	98±1	33±2
2	FeCl <sub>3</sub>	78±3	51±2	86±2	3±1
3	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	76±2	47±3	83±2	2±1

**Table S2.** Floc size of different coagulants at the end of coagulation processes

NO.	Coagulants	Floc size (μm)
1	CSM (M/Si=2:1)	~510
2	CSM (M/Si=3:1)	~612
3	CSM (M/Si=4:1)	~561
4	PSiA	~280
5	PFS	~400