Supplementary Information

Synthesize of 4A zeolite molecular sieves by modifying fly ash with water treatment residue for removal of ammonia nitrogen from water

Zhuochun Huang [1], Yuantao Cai [1], Xiaoling Fan [1], Kai Ning [2,3], Xiaohong Yu [1], Shaocheng Zheng [1], Hansong Chen [1,*], Yunlong Xie [1,*]

[1] College of Xingzhi, Zhejiang Normal University, Jinhua, 321000, China; zhuochunhuang@outlook.com (Z.H.); cyt3076386053@163.com (Y.C.); fxling5482@outlook.com (X.F.); zsdyuxiaohong@163.com (X.Y.); jhzsc@zjnu.cn (S.Z.)

[2] Key Laboratory of Vegetation Restoration and Management of Degraded Ecosystems, South China Botanical Garden, Chinese Academy of Sciences, Guangzhou, 510630, China

[3] University of Chinese Academy of Sciences, Beijing, 100049, China

* Corresponding authors:

Hansong Chen (Tel: +86 15988595016, Email: chenhs@zjnu.edu.cn)

Yunlong Xie (Tel: +86 13867983711, Email: xieyunlong@zjnu.edu.cn)

Contents

Table S1. Chemical composition of CFA….....S3

Table S2. Main components of WTR….....S4

Fig. S1. The flow chart of WTR-CFA zeolite preparation.....S5

Fig. S2. The influence of different CFA: WTR on NH4+-N adsorption.....S6

Fig. S3. Mapping diagram of WTR-CFA zeolite.....S7

Table S1. Chemical composition of CFA.

Components	SiO_2	Al_2O_3	Fe_2O_3	CaO	TiO_2	MgO	Na_2O	K_2O	SO_3	LOI	total
content (wt%)	48.21	33.18	4.80	5.68	1.61	0.75	0.45	0.29	0.26	1.20	96.44

Note: The data is provided by the sample provider.

Table S2. Main components of WTR.

Components	Al	Fe	Ca	Cu	Cr	pH	Total solid volume
unit	g/kg	g/kg	g/kg	mg/kg	mg/kg	—	mg/L
content	122.6	36.5	12.3	63.6	16.3	6.7	5300

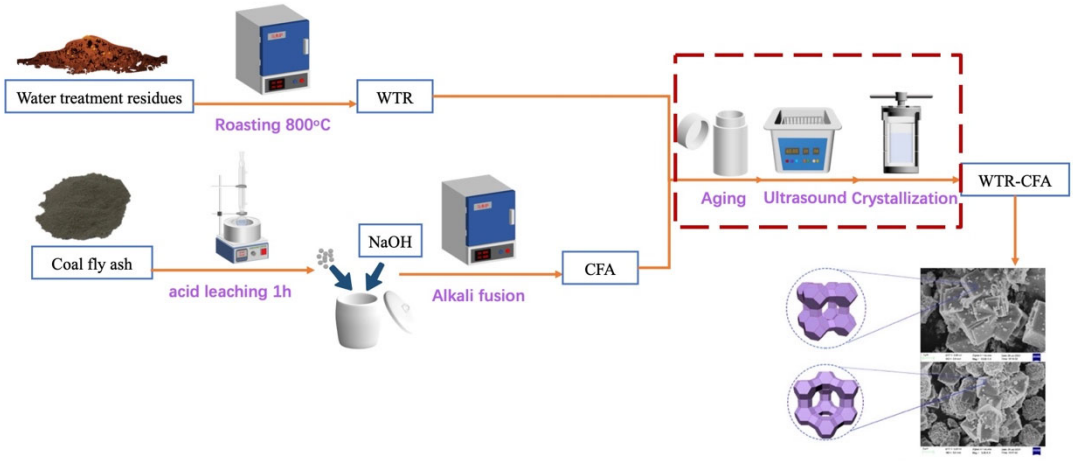


Figure S1. The flow chart of WTR-CFA zeolite preparation.

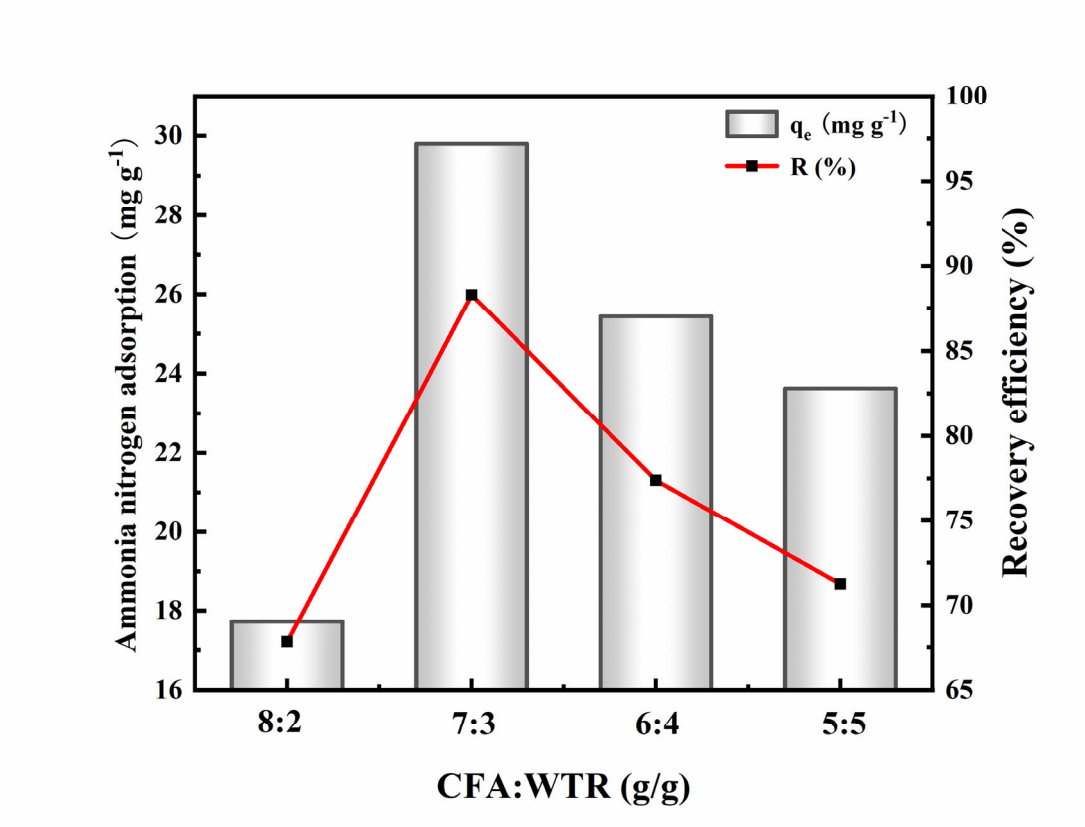


Figure S2. The influence of different CFA: WTR on NH_4^+-N adsorption.

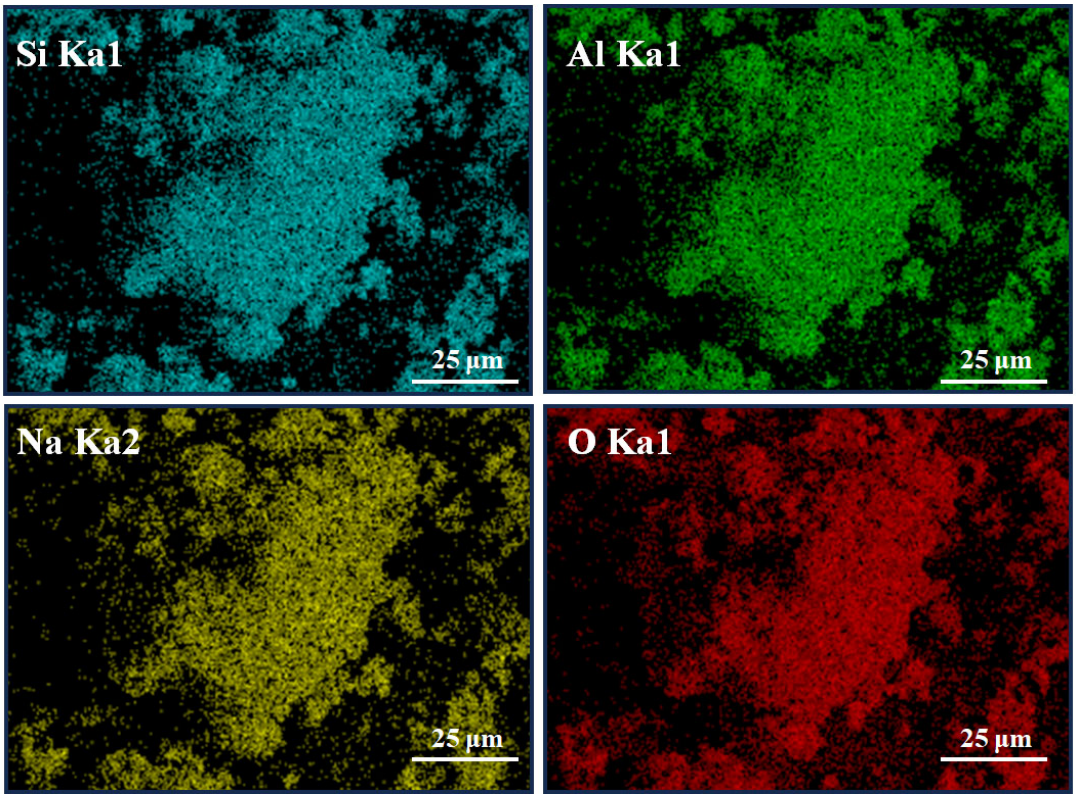


Figure S3. Mapping diagram of WTR-CFA zeolite.