Supporting Information Profiles

Continuous-flow and safe synthesis of 3-amino-4-amidoximinofurazan

Shichun Weng[a], Wei Feng[b], Wenqian Wu[a], Zichao Guo[a]*, Junjie Li[a], Huanhuan Chen[a], Liping Chen[a], Wanghua Chen[a],

[a] Department of Safety Engineering, School of Chemical Engineering, Nanjing University of Science and Technology, Nanjing, Jiangsu, 210094, China

[b] Xi'an Modern Chemistry Research Institute, Shanxi, 710065, China

*Corresponding author: e-mail: gzc319@njust.edu.cn, Tel: +86 25 84315526, Fax: +86 25 84315526

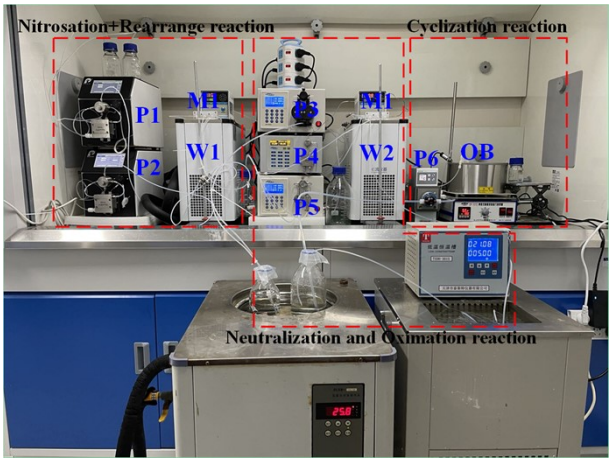


Figure S1. The actual picture of the whole flow setup for synthesize AAOF.

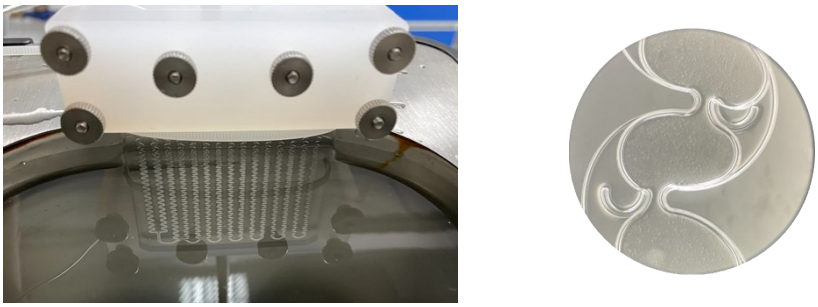


Figure S2. local enlarged image of microchannel reactor.

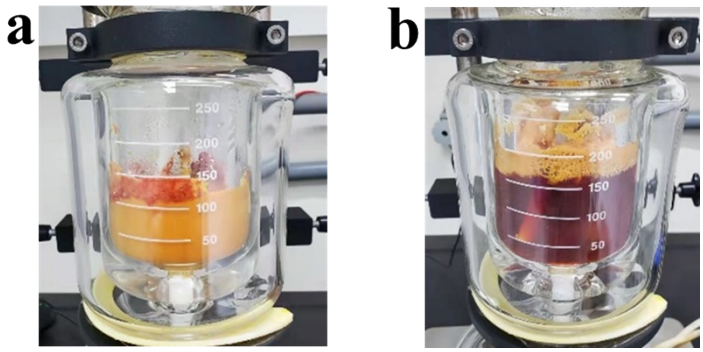


Figure S3 a) Precipitation of the intermediate product within the oximation reaction; b) Precipitation of AAOF during the dehydration cyclization reaction.

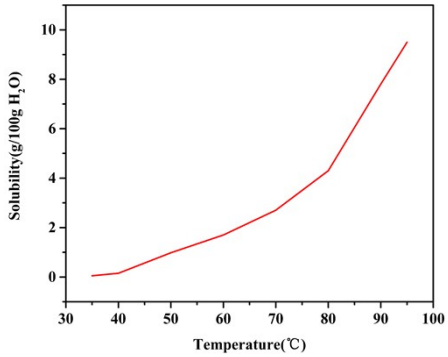


Figure S4. The solubility of AAOF in water at different temperature.

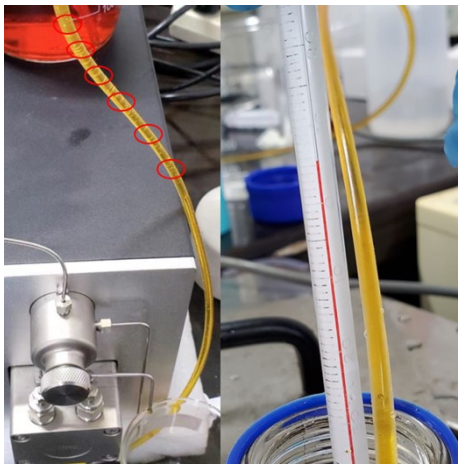


Figure S5. The bubble generation in the infusion tube at the room temperature (Left) and droping the solution temperature (Right).

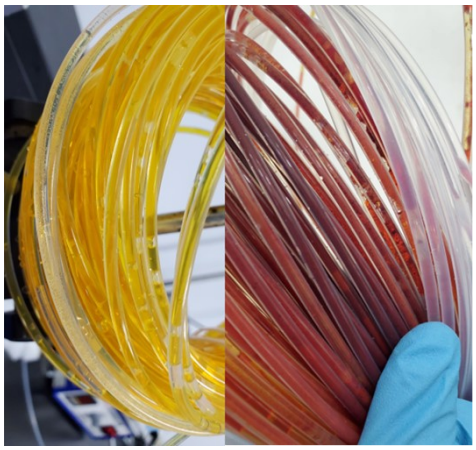
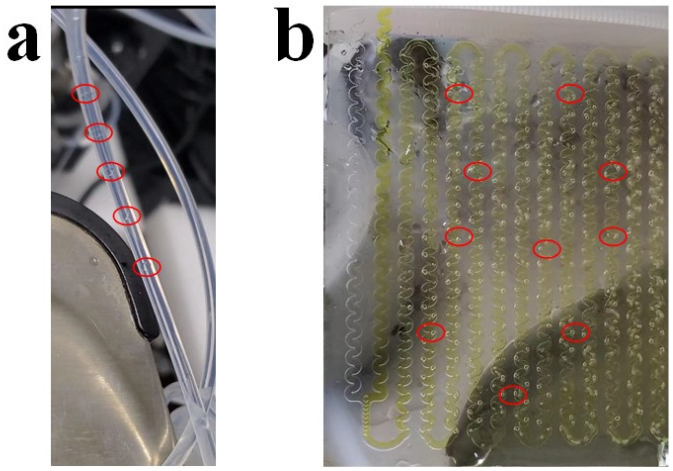
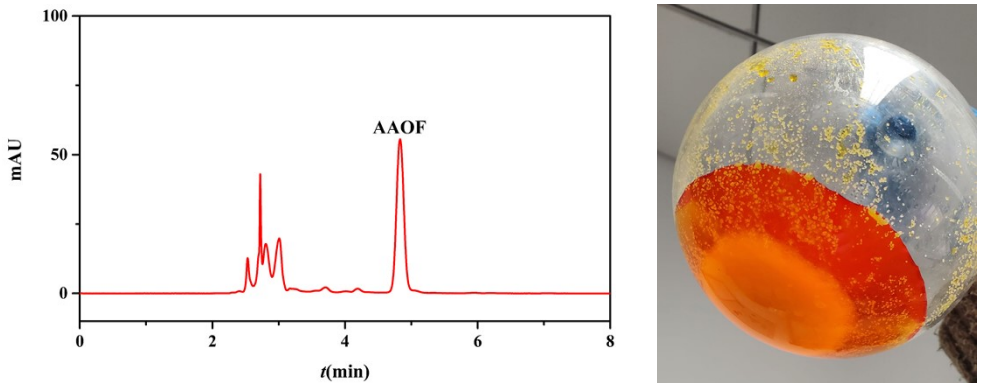


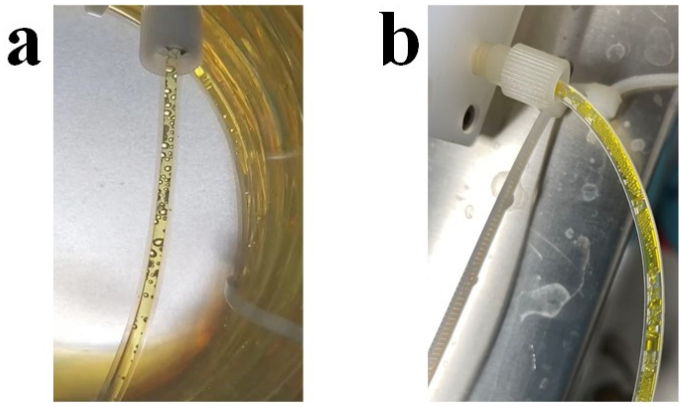
Figure S6. The normal operation after 1,3-Amino-Trioxime propane dissolved in water (Left) and blocked tubular reactor after solid precipitation (Right) during the oximation reaction.



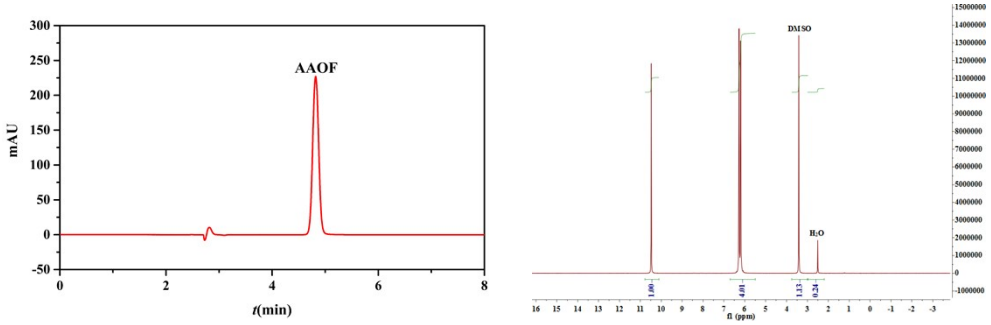
Figures S7. The bubble generation in the neutralization and oximation stage. a) The gas generation in the tubular reactor for the neutralization reaction. b) The gas generation in the micro-reactor for oximation the reaction.



Figures S8. The HPLC results of the waste water after filtering AAOF (Left). The precipitation of AAOF after evaporating a part of water out of the final solution (Right).



Figures S9. The comparation of gas generation in the extention tube at different temperature for the nitrosation-rearrangement coupling reaction. a) the reaction temperature of 15℃. b) the reaction temperature of 55℃.



Figures S10. The HPLC results (Left) and ^{1}H NMR results (Right) of AAOF.