

NanoBioLab



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Publications

1. A. Roy, H. Joshi, R. Ye, J. Shen, F. Chen, A. Aksimentiev and H. Zeng, "Polyhydrazide-Based Organic Nanotubes as Efficient and Selective Artificial Iodide Channels," *Angewandte Chemie International Edition*, 132 (2020) 4836-4843. IF 12.102
2. J. Shen, J. Fan, R. Ye, N. Li, Y. Mu and H. Zeng, "Polypyridine-Based Helical Amide Foldamer Channels for Rapid Transport of Water and Proton with High Ion Rejection," *Angewandte Chemie International Edition*, (2020) DOI: 10.1002/anie.202003512. IF 12.257
3. J. Shen, R. Ye, A. Romanies, A. Roy, F. Chen, C. Ren, Z. Liu and H. Zeng, "An Aquafoldmer-Based Aquaporin-Like Synthetic Water Channel," *Journal of the American Chemical Society*, 142 (2020) 10050-10058. IF 14.695
4. H. Zeng, A. Roy, H. Joshi, R. Ye, J. Shen, F. Chen and A. Aksimentiev, "Polyhydrazide-Based Organic Nanotubes as Extremely Efficient and Highly Selective Artificial Iodide Channels," *Angew. Chem. Int. Ed.*, (2020) DOI: 10.1002/anie.201916287
5. H. Zeng, F. Chen, J. Shen, N. Li, A. Roy, R. Ye, and C. Ren, "Pyridine/Oxadiazole-Based Helical Foldamer Ion Channels with Exceptionally High K⁺/Na⁺ Selectivity," *Angew. Chem. Int. Ed.*, (2019) 10.1002/anie.201906341
6. Y. Zhang, Y. Zhong, A. L. Connor, D. P. Miller, R. Cao, J. Shen, B. Song, E. S. Baker, Q. Tang, S. V. S. R. K. Pulavarti, R. Liu, Q. Wang, Z.-I. Lu, T. Szyperski, H. Zeng, X. Li, R. D. Smith, E. Zurek, J. Zhu, and B. Gong, "Folding and Assembly of Short α, β, γ-Hybrid Peptides: Minor Variations in Sequence and Drastic Differences in Higher-Level Structures," *J. Am. Chem. Soc.*, 141 (2019) 14239-14248
7. F. Zeng, F. Liu, L. Yuan, S. Zhou, J. Shen, N. Li, H. Ren and H. Zeng, "A Pore-Forming Tripeptide as an Extraordinarily Active Anion Channel," *Org. Lett.*, 21[12] (2019) 4826-4830
8. R. Ye, C. Ren, J. Shen, F. Chen, N. Li, A. Roy, and H. Zeng, "Molecular Ion Fishers as Highly Active and Exceptionally Selective K⁺ Transporters," *J. Am. Chem. Soc.*, 141[25] (2019) 9788-9792
9. L. Yuan, J. Shen, R. Ye, F. Chen and H. Zeng, "Structurally Simple Trimesic Amides as Highly Selective Anion Channels," *Chem. Commun.*, 55 (2019) 4797-4800

10. C. Ren, F. Zeng, J. Shen, F. Chen, A. Roy, S. Zhou, H. Ren and H. Zeng, "Pore-Forming Monopeptides as Exceptionally Active Anion Channels," *J. Am. Chem. Soc.*, 140 (2018) 8817-8826
11. C. Ren, J. Shen and H. Zeng, "Combinatorial Evolution of Fast-Conducting Highly Selective K⁺-Channels via Modularly Tunable Directional Assembly of Crown Ethers," *J. Am. Chem. Soc.*, 139 (2017) 12338-12341
12. J. Shen, C. Ren and H. Zeng, "Surprisingly High Selectivity and High Affinity in Mercury Recognition by H-Bonded Cavity-Containing Aromatic Foldarands," *J. Am. Chem. Soc.*, 139 (2017) 5387-5396
13. C. Ren, J. Shen, F. Chen, and H. Zeng, "Rapid Room-Temperature Gelation of Crude Oils by a Wetted Powder Gelator," *Angew. Chem. Int. Ed.*, 56[14] (2017) 3847-3851
14. H. Zhao, J. Shen, C. Ren, W. Zeng, and H. Zeng, "A Foldamer-Based Organocatalyst for Direct Arylations of Unactivated Arenes," *Org. Lett.*, (2017) DOI: 10.1021/acs.orglett.7b00921
15. C. Ren, F. Chen, F. Zhou, J. Shen, H. Su and H. Zeng, "Low-Cost Phase-Selective Organogelators for Rapid Gelation of Crude Oils at Room Temperature," *Langmuir*, 32 (2016) 13510-13516
16. J. Shen, C. Ren and H. Zeng, "Tuning Cation-Binding Selectivity and Capacity via Side Chain-Dependent Molecular Packing in the Solid State," *Chemical Communications*, 52 (2016) 10361-10364
17. C. Ren, J. Shen, and H. Zeng, "One-Pot Synthesis of Strained Macrocyclic Pyridone Hexamers and Their High Selectivity toward Cu²⁺ Recognition," *Org. Lett.*, 17[24] (2015) 5946-5949
18. J. Shen, W. Ma, L. Yu, J.-B. Li, H.-C. Tao, K. Zhang and H. Zeng, "Size-Dependent Patterned Recognition and Extraction of Metal Ions by a Macrocyclic Aromatic Pyridone Pentamer," *Chemical Communications*, 50 (2014) 12730-12733
19. J. C. Hu, L. Chen, J. Shen, J. Luo, P. C. Deng, Y. Ren, H. Q. Zeng, W. Feng and L. H. Yuan, "Convergent Heteroditopic Cyclo[6]aramides as Macrocyclic Ion-pair Receptors for Constructing [2]Pseudorotaxanes," *Chemical Communications*, 50 (2014) 8024-8027

Patents

1. H. Q. Zeng, A. Roy, F. Chen, J. Shen, "Polyhydrazides-Based Superpermeable Synthetic Water Channels", Singapore Patent Granted in February of 2019