

## PAPERS, BOOKS, PATENTS AND CONFERENCES

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### Papers:

1. **P. Z. Sun**, Q. Yang, W. J. Kuang, Y. V. Stebunov, W. Q. Xiong, J. Yu, R. R. Nair, M. I. Katsnelson, S. J. Yuan, I. V. Grigorieva, M. Lozada-Hidalgo, F. C. Wang, A. K. Geim. Limits on gas impermeability of graphene. *Nature*, **2020**, 579, 229–232.
2. Q. Yang, **P. Z. Sun**, L. Fumagalli, Y. V. Stebunov, S. J. Haigh, Z. W. Zhou, I. V. Grigorieva, F. C. Wang, A. K. Geim. Capillary condensation under atomic-scale confinement. *Nature*, **2020**, 588, 250–253.
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4. **P. Z. Sun**, R. Z. Ma, X. Y. Bai, K. L. Wang, H. W. Zhu, T. Sasaki. Single-layer nanosheets with exceptionally high and anisotropic hydroxyl ion conductivity. *Science Advances*, **2017**, 3, e1602629.
5. **P. Z. Sun**, K. L. Wang, H. W. Zhu. Recent developments in graphene-based membranes: structure, mass-transport mechanism and potential applications. *Advanced Materials*, **2016**, 28, 2287–2310.
6. **P. Z. Sun**, F. S. Chen, W. Zhou, X. H. Liu, R. Z. Ma, T. Sasaki. Superionic conduction along ordered hydroxyl networks in molecular-thin nanosheets. *Materials Horizons*, **2019**, 6, 2087–2093.
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8. **P. Z. Sun**, F. Zheng, M. Zhu, Z. G. Song, K. L. Wang, M. L. Zhong, D. H. Wu, R. B. Little, Z. P. Xu, H. W. Zhu. Selective trans-membrane transport of alkali and alkaline earth cations through graphene oxide membranes based on cation- $\pi$  interactions. *ACS Nano*, **2014**, 8, 850–859.
9. **P. Z. Sun**, R. Z. Ma, H. Deng, Z. G. Song, Z. Zhen, K. L. Wang, T. Sasaki, Z. P. Xu, H. W. Zhu. Intrinsic high water/ion selectivity of graphene oxide lamellar membranes in concentration gradient-driven diffusion. *Chemical Science*, **2016**, 7, 6988–6994.
10. **P. Z. Sun**, R. Z. Ma, T. Sasaki. Recent progress on exploring exceptionally high and anisotropic  $H^+/OH^-$  ion conduction in two-dimensional materials. *Chemical Science*, **2018**, 9, 33–43.
11. **P. Z. Sun**, R. Z. Ma, W. Ma, J. H. Wu, K. L. Wang, T. Sasaki, H. W. Zhu. Highly selective charge-guided ion transport through a hybrid membrane consisting of anionic graphene oxide and cationic hydroxide nanosheet superlattice units. *NPG Asia Materials*, **2016**, 8, e259.
12. **P. Z. Sun**, Q. Chen, X. D. Li, H. Liu, K. L. Wang, M. L. Zhong, J. Q. Wei, D. H. Wu, R. Z. Ma, T. Sasaki, H. W. Zhu. Highly efficient quasi-static water desalination using monolayer graphene oxide/titania hybrid laminates. *NPG Asia Materials*, **2015**, 7, e162.
13. **P. Z. Sun**, K. L. Wang, J. Q. Wei, M. L. Zhong, D. H. Wu, H. W. Zhu. Effective recovery of acids from iron-based electrolytes using graphene oxide membrane filters. *Journal of Materials Chemistry A*, **2014**, 2, 7734–7737.
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23. **P. Z. Sun**, R. Z. Ma, K. L. Wang, M. L. Zhong, J. Q. Wei, D. H. Wu, T. Sasaki, H. W. Zhu. Suppression of the coffee-ring effect by self-assembling graphene oxide and monolayer titania. *Nanotechnology*, **2013**, *24*, 075601.
24. **P. Z. Sun**, M. Zhu, K. L. Wang, M. L. Zhong, J. Q. Wei, D. H. Wu, Y. Cheng, H. W. Zhu. Photoinduced molecular desorption from graphene films. *Applied Physics Letters*, **2012**, *101*, 053107.
25. **P. Z. Sun**, M. Zhu, R. Z. Ma, K. L. Wang, J. Q. Wei, D. H. Wu, T. Sasaki, H. W. Zhu. Graphene oxide/titania hybrid films with dual-UV-responsive surfaces of tunable wettability. *RSC Advances*, **2012**, *2*, 10829–10835.

#### **Books.**

1. Graphene-based Membranes for Mass Transport Applications. Editors: **P. Z. Sun**, H. W. Zhu. The Royal Society of Chemistry (2018).
2. **P. Z. Sun**, H. W. Zhu. Chapter 6: Selective mass transport properties of graphene oxide lamellar membranes in *Graphene-based Membranes for Mass Transport Applications*. Editors: **P. Z. Sun**, H. W. Zhu. The Royal Society of Chemistry (2018).

#### **Patents.**

1. R. Z. Ma, T. Sasaki, **P. Z. Sun**. Fuel cell and water electrolysis device. February 1, 2021, Japan, 6831099.
2. H. W. Zhu, **P. Z. Sun**, K. L. Wang. Hybrid desalination membrane as well as preparation method and application thereof. September 28, 2016, China, ZL201510041252.3.
3. **P. Z. Sun**, H. W. Zhu, M. Zhu, K. L. Wang, J. Q. Wei, D. H. Wu. The preparation method of a graphene and reduced graphene oxide laminate film. August 12, 2015, China, ZL201310078539.4.