

# Proton Transport through 2D Crystals

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I shall review our group's ongoing work [1-4] on proton transport through graphene and other two-dimensional materials, focusing on fundamental aspects of this phenomenon but also discussing possible applications including those in fuel cells, hydrogen production, hydrogen-isotope separation, etc.

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## References

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- [1] S. Hu et al. Proton transport through one-atom-thick crystals. *Nature* 516 (2014) 227-230
- [2] M. Lozada-Hidalgo et al. Sieving hydrogen isotopes through two-dimensional crystals. *Science* 351 (2016) 68-70
- [3] L. Mogg et al. Atomically thin micas as proton-conducting membranes. *Nature Nano* 14 (2019) 962-966
- [4] P. Z. Sun et al. Limits on gas impermeability of graphene. *Nature* 579 (2020) 229-232