## nature communications



**Article** 

https://doi.org/10.1038/s41467-025-62737-3

## Interaction-driven giant electrostatic modulation of ion permeation in atomically small capillaries

Received: 6 May 2024

Accepted: 28 July 2025

Published online: 29 September 2025

Dhal Biswabhusan <sup>1</sup>, Yechan Noh <sup>2</sup>, Sanat Nalini Paltasingh <sup>3</sup>,

Chandrakar Naman <sup>1</sup>, Siva Sankar Nemala <sup>4</sup>, Rathi Aparna <sup>1</sup>,

Kaushik Suvigya <sup>1</sup>, Andrea Capasso <sup>4</sup>, Saroj Kumar Nayak<sup>3</sup>, Li-Hsien Yeh <sup>5,6</sup> &

Kalon Gopinadhan © 1,7