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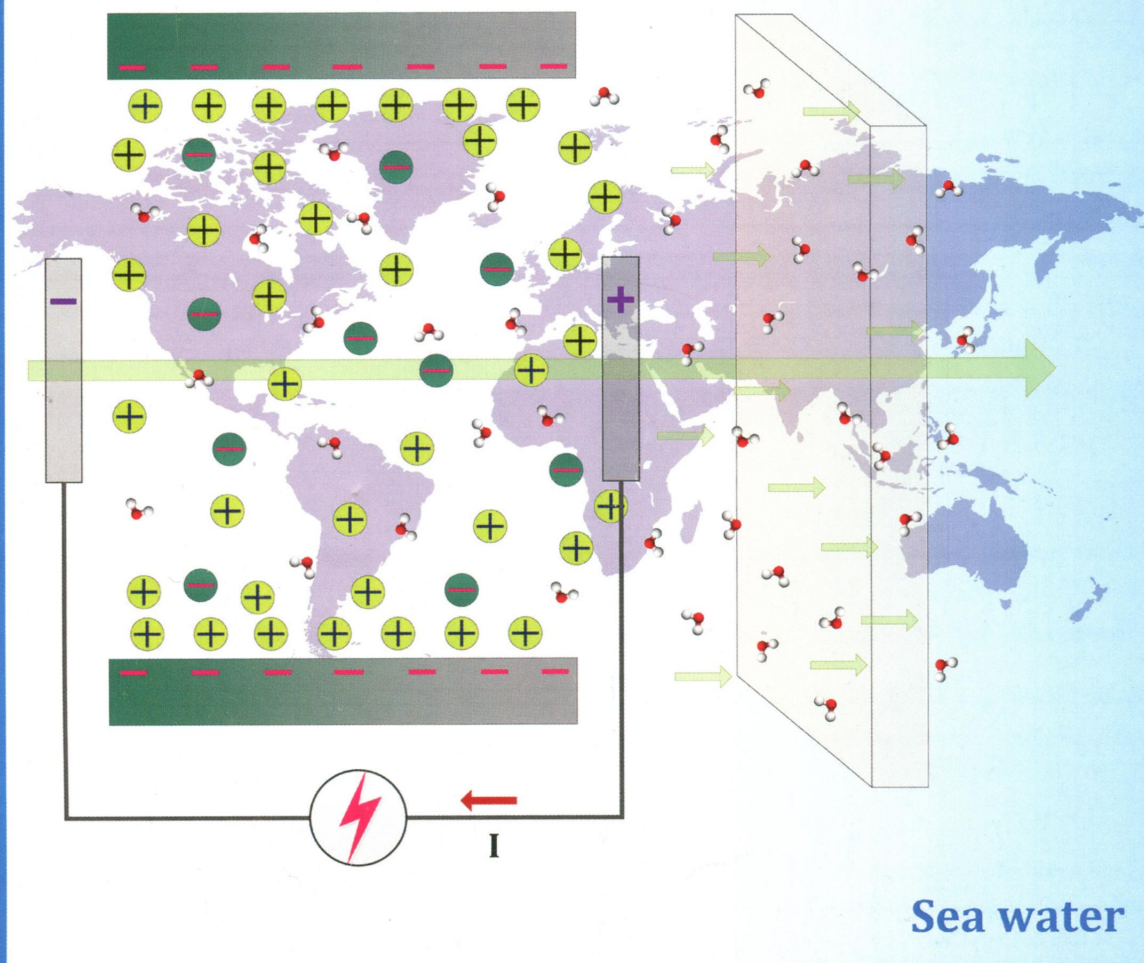
C

River water

Micro/Nanochannel

Semipermeable membrane

Energy Conversion
through Electrokinetic
Flow Driven by
Forward Osmosis
(see page 10574)



ENERGY CONVERSION AND STORAGE, OPTICAL AND ELECTRONIC DEVICES,
INTERFACES, NANOMATERIALS, AND HARD MATTER



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ON THE COVER: Energy conversion through electrokinetic flow driven by forward osmosis (created by Y. M. Jiao). This study reports a novel salinity-gradient-based energy conversion technique using combined two principles of forward osmosis (FO) and electrokinetics (EK). The proposed FO-EK energy conversion technique has been demonstrated by using an experimental system comprising two submodules, an FO submodule and an EK submodule. In the system, a suction force, generated in the FO submodule due to the salinity gradient (e.g., between sea water and river water), draws water flow through micro/nanochannels in the EK submodule where electrical power in terms of streaming potential is generated, which can be harvested as the power source to an external electric circuit. See page 10574

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Energy Conversion from Salinity Gradients by Forward Osmosis—Electrokinetics

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Interslit Coupling via Ultrafast Dynamics across Gold-Film Hole Arrays

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Additive-Free Shape-Invariant Nano-to-Micron Size-Tuning of Cu₂O Cubic Crystals by Square-Wave Voltammetry

Xuyun Guo, Weiqiang Lv, and Xiao-Yuan Li*

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Graphene Nucleation from Amorphous Nickel Carbides: QM/MD Studies on the Role of Subsurface Carbon Density

Menggai Jiao, Hujun Qian, Alister Page,* Kai Li, Ying Wang,* Zhijian Wu,* Stephan Irlle, and Keiji Morokuma

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CdS:Mn–Polysulfido Complex Nanoclusters with H₂O₂-Dependent and Site-Specific Color Changes

Yun Shan, Xinglong Wu,* Xiao Gan, Xiaobin Zhu, Jiancang Shen, and Paul K. Chu

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Controlling Allotropy in Ruthenium Nanoparticles: A Pulsed-Flow Supercritical Synthesis and *in Situ* Synchrotron X-ray Diffraction Study

Jian-Li Mi, Yanbin Shen, Jacob Becker, Martin Bremholm, and Bo B. Iversen*

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Ligand Adsorption and Exchange on Pegylated Gold Nanoparticles

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Theory of Surface-Enhanced Raman Scattering in Semiconductors

John R. Lombardi* and Ronald L. Birke

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Cationic Au Nanoparticle Binding with Plasma Membrane-like Lipid Bilayers: Potential Mechanism for Spontaneous Permeation to Cells Revealed by Atomistic Simulations

Elena Heikkilä, Hector Martinez-Seara, Andrey A. Gurtovenko, Matti Javanainen, Hannu Häkkinen, Ilpo Vattulainen, and Jaakko Akola*

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Intercalation of Gas Molecules in Graphene Oxide Interlayer: The Role of Water

Daek Kim, Dae Woo Kim, Hyung-Kyu Lim, Jiwon Jeon, Hyungjun Kim, Hee-Tae Jung,* and Huen Lee*

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Molecular Dynamics Study on the Self-Assembled Monolayer Grown from a Droplet of Alkanethiol

Hyojeong Kim, Joyanta K. Saha, Zhengqing Zhang, Jihye Jang, Mohammad A. Matin, and Joonkyung Jang*

Additions and Corrections

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Correction to "Soft-Templated Room Temperature Fabrication of Nanoscale Lanthanum Phosphate: Synthesis, Photoluminescence, and Energy-Transfer Behavior"

Sayantani Chall, Soumya Sundar Mati, Soumyadipta Rakshit, and Subhash Chandra Bhattacharya*