



DREXEL UNIVERSITY

A.J. Drexel

Nanomaterials Institute

Drexel University
3141 Chestnut Street
Philadelphia, PA 19104
TEL 215-895-6446
FAX 215-895-1934

Honorable Lamar Smith
Chairman
House Committee on Science, Space & Technology 2409 Rayburn House Office Building
Washington, D.C. 20515

Honorable Eddie Bernice Johnson
Ranking Member House Committee on Science, Space & Technology 2468 Rayburn House Office
Building
Washington, D.C. 20515

July 8, 2016

Dear Chairman Smith and Ranking Member Johnson,

This letter is written in strong support of the Electricity Storage Basic Research Initiative. I am a Distinguished Professor of Materials Science and Engineering, Chemistry, and Mechanical Engineering and Mechanics at Drexel University, the Founding Director of the A.J. Drexel Nanomaterials Institute and an Associate Editor of the ACS Nano journal. Achieving a secure, sustainable energy future is one of the greatest scientific and societal challenges of our time. Electricity generated from renewable sources, such as solar and wind, is critical to meeting future energy demands, but requires efficient and affordable electrical energy storage. Energy has become an international priority. Emerging world powers are investing heavily into energy R&D and major resources have been made available for applied electrochemistry and energy technology. Ironically, fundamental electrochemical investigations have not been buoyed by the rising energy consumption and storage demand. The need for research that elucidates fundamental aspects of electrochemistry in support of its applications in energy storage has never been greater. To meet the ever-increasing energy storage demand we need to take advantage of the latest achievements in nanoscale science and engineering, electrochemistry and material chemistry. Prominent programs in the United States, such as Energy Frontier Research Centers, have contributed significantly to understanding phenomena at the molecular and atomic level in energy storage systems. However, further support is needed for multidisciplinary teams capable of targeting the most challenging basic science problems and generating fundamental knowledge required for developing new solutions for energy storage and conversion. Increasing support of fundamental theoretical and experimental research may lead to the discovery of new electrolytes that will provide safe storage with a high energy density, new electrode materials that will enable the use of multivalent ions such as magnesium and aluminum, and substantial advancements in large-scale flowable organic and inorganic energy storage systems. Strong and consistent support of basic research, through the Electricity Storage Basic Research Initiative, will not only accelerate progress in storage and utilization of renewable energy from a variety of sources, but will decrease our dependence on nonrenewable, environmentally detrimental fossil fuels, bringing the country to a leadership position in not only energy, but also in electronics and other fields that depend on the availability of advanced energy storage solutions.

Sincerely yours,

Yury Gogotsi, Ph.D., D.Sc., D.h.c.
Distinguished University Professor and Trustee Chair of Materials Science & Engineering
Director, A.J. Drexel Nanomaterials Institute
Gogotsi@Drexel.edu