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Robert Alan Huggins is Professor Emeritus at the Department of Materials Science and Engineering at the School of Engineering at Stanford University [1] and Honorary Professor at the University of Kiel and the University of Ulm. He was previously Chief Scientist at the Center for Solar Energy and Hydrogen Research in Ulm. The International Society for Solid State Ionics ...

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Introduction Energy is necessary for a number of reasons, the most basic and obvious involve the preparation of food and the provision of heat to make life comfortable, or at least, bearable. Subsequently, a wide range of technological uses of energy have emerged and been developed, so that the...

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Prof. Huggins joined the faculty at Stanford after receiving his doctorate at MIT in 1954. He played a seminal role in the initiation of the field of Solid State Ionics, and has been centrally involved in the development of the materials science basis of lithium-ion and other advanced battery systems for energy storage.

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1 Introduction Most vehicles are propelled by internal combustion motors that consume liquid fuels, either gasoline r diesel fuel. In those cases, the energy storage mechanism is a simple tank to hold t

Li-Sb system The total energy that can be stored is proportional to the total area under the t tration curve. The energy released in the first reaction is the product of the voltage of the first plateau times its capacity, that is, the charge passed through the cell in connection with that reaction. That corresponds to the area insi

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