



A study of the electrochemical processes in lithium–sulphur cells by impedance spectroscopy[☆]

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ABSTRACT

The changes in the properties of lithium–sulphur cell components (electrolyte, sulphur and lithium electrodes) during cycling are studied by AC impedance spectroscopy. It is shown that during the charge and discharge of lithium–sulphur cells the conductivity of the electrolyte is changed. We believe that the observed changes in the electrolyte conductivity can be explained by the formation of soluble lithium polysulphides by electrochemical reactions. The properties of the electrolyte significantly influence the rate of the electrochemical processes which occur both on the sulphur and lithium electrodes in lithium–sulphur cells.

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