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MoS_2/graphene Composite Paper Electrodes for Na-ion Battery Applications LAMUEL DAVID, GURPREET SINGH, Kansas State Univ — We study the synthesis, electrochemical and mechanical performance of large area layered freestanding papers composed of acid functionalized few layer molybdenum disulfide (MoS_2) and reduced graphene oxide (rGO) flakes for use as a self-standing flexible electrode in sodium ion batteries. Synthesis was achieved through vacuum filtration of homogenous dispersions consisting of varying wt. % of exfoliated MoS_2 flakes in GO in DI water, followed by thermal reduction. The electrochemical behavior of the composite paper was evaluated as counter electrode against pure Na foil in a half-cell configuration. The papers showed good Na cycling ability with charge capacity of approx. 225 $mAh.g^{-1}$ with respect to total weight of the electrode and coulombic efficiency reaching 99%.

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