**ABSTRACT**

Tin micro‐ and nanowires have been synthesised for the first time *via* high‐energy ball milling techniques. Typically nanowires with diameters measuring *ca.* 500 nm and lengths of up to 100 μm were fabricated by milling powders of tin metal and lithium nitride, Li3N in 3:1 or 5:1 molar ratios. The as‐prepared products were characterised and analysed by powder X‐ray diffraction (PXRD), Raman spectroscopy, scanning electron microscopy (SEM) and Energy Dispersive X‐ray Analysis (EDX). Combined experimental evidence would suggest that the elemental nanowires grow in the presence of the tin‐rich alloy Li2Sn5. The composites were tested as anodes for secondary lithium‐ion batteries and even for non‐optimised materials demonstrate appreciable and promising discharge capacities.