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TOWARDS THE SYNTHESIS OF ELECTROACTIVE BLOCK
COPOLYMERS VIA ANIONIC-TO-ZIEGLER-NATTA
TRANSFORMATION REACTIONS

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Abstract. Styrene/acetylene diblock copolymers have been prepared by alkylating $\text{Ti}(\text{OBu})_4$ with polystyryl lithium ($\text{Li}/\text{Ti} = 3$) in THF followed by exposure to acetylene. Homopolystyrene can be separated from the soluble, blue-violet diblock copolymer by extraction with 10% THF/acetone, the latter being soluble in THF. Infrared spectroscopy confirmed the presence of polystyrene and $(\text{CH})_x$ components. Gel permeation chromatography of copolymers in which the $(\text{CH})_x$ portion has been converted to poly(1,2-dibromoethylene unambiguously demonstrates that block copolymers have been synthesized. The yields of block copolymer based on the total weight of polystyryl Li used initially is estimated to be ca. 5%.