

## NEW MEMBRANES FOR ENHANCED PURIFICATION OF NATURAL GAS AT THE WELLHEAD

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The project goals are to examine a series of aliphatic polyimide films (synthesis and polymer structure shown below) and their subsequent TiO<sub>2</sub> nanocomposites for potential use as a purification membrane for natural gas. During the first two years of the project we have completed the synthesis of the homologous aliphatic polyimide series, with and without the addition of TiO<sub>2</sub> and have collected the thermal/mechanical data (shown below) on these materials. We continue to collect the gas permeation data for the native homologous series and will soon begin the collection of this data from the nanocomposites. More recently, we have started to synthesize a new series of polyimides which incorporate a rigid aliphatic diamine monomer.

