# PROBING THE CONFORMATIONAL LANDSCAPE OF A POLYETHER BUILDING BLOCK BY RAMAN JET SPECTROSCOPY

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Polyethylene oxides (Polyethylene glycoles) represent a prominent class of water-soluble polymers. Surprisingly, already 1,2-dimethoxyethane as the simplest representative of this polymer family has an undetermined conformational preference in the gas phase. Here, we address this problem by spontaneous Raman scattering in a supersonic jet.
Variation of carrier gas, stagnation pressure, nozzle distance and temperature provides information on the three lowest conformations and their mutual interconversion during collisions in the expansion. The results are compared to quantum chemical calculations of the potential energy landscape and of normal modes.