

## W0203

**Application of CO<sub>2</sub> to Crystallization of Highly Fluorinated Compounds.** Marilyn Olmstead, Philip Jessop, Dept. of Chemistry, One Shields Ave., Univ. of California, Davis, CA 95616 USA.

Carbon dioxide as a solvent and as an antisolvent, both in the sub- and supercritical state, has been explored over the past 10 years or so in various crystallization applications. One promising approach, although so far of limited use, takes advantage of the expansion of an organic liquid by the introduction of gaseous CO<sub>2</sub>. This expansion changes the properties of the organic liquid in such a way that it may become a better or worse solvent. Our experience is with highly fluorinated compounds which are insoluble in many organic liquids and tend to form oils rather than crystallize. However, the introduction of subcritical gaseous CO<sub>2</sub> into liquids such as toluene, DMF and MeOH increases the fluorophilicity of the liquid and allows for the fluorinated compounds to dissolve. When the CO<sub>2</sub> is allowed to slowly dissipate, crystals of the solute form and purification is achieved. In many cases, crystals suitable for X-ray crystallography are obtained. This is the inverse of the GAS (gas antisolvent) process which uses the fact that some solids are soluble in organic liquids but not in the expanded liquid. Additional details for the use of this recrystallization method will be given.