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Have some large structures? Try small-angle neutron scattering (SANS) LISA DEBEER-SCHMITT, KATHY BAILEY, NSSD, ORNL, LILIN HE, GEORGE WIGNALL, YURI MELNICHENKOV, NSSD, ORNL, KEN LITRELL, NSSD, ORNL — The small-angle neutron scattering (SANS) beam line, CG-2, has been in operation since 2007. CG-2 has been optimized so that structures from 0.5 to 200 nm can be thoroughly investigated. HFIR's cold source places the flux at CG-2 among the best in the world. Along with high flux, many varied sample environments can easily be integrated into the beam line which gives the user a versatile temperature range from 1.5 K to 1000 K. In addition there are two cryomagnets (horizontal 4.5 T and vertical 7 T), pressure cells and load frames available to users allowing for the availability of multiple configurations of experimental setups. Due to all the above equipment and the flux at CG-2, there have been many diverse and intriguing scientific developments. One such outcome is the study of flux-line lattices found in Type-II superconductors including the highly touted iron pnictides. Besides superconductors, other science studied on CG-2 ranges from molecular self-assembly and interactions in complex fluids to phase separation to grain growth and orientation in metallurgical alloys.

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