

Robert D. Shull



Robert Shull received a B.S. in Materials Science from MIT in 1968, and a M.S. and Ph.D. in Metallurgical and Mining Engineering from the University of Illinois at Urbana-Champaign in 1973 and 1976 respectively. His Ph.D. thesis work, in which he discovered the "reversed Curie temperature" phenomenon in $\text{Fe}_{70}\text{Al}_{30}$, was instrumental in his recent discovery of "Spin Density Waves" (a phenomenon which had been predicted 40 years ago to exist, but never found) in the same alloy system. After being awarded a postdoctoral fellowship from CALTECH between 1976 and 1979, he joined the National Bureau of Standards where he initially set up the rapid solidification facility that led to the

discovery of "quasicrystals" in 1980. Shull was also part of the collaboration that prepared the first thin films of a high TC superconductor by the laser ablation process (awarded "Best Paper of the Year" at the Applied Physics Laboratory of JHU), and his field ion microscopy observation of the high TC materials (first ever) was even featured on the cover of Science magazine (Jan. 8, 1988). He was the first to explain the novel "attractable levitation" found in some high TC materials, and he discovered the enhanced magnetocaloric effect in nanocomposites.

Shull has authored and co-authored over 150 publications and presented over 250 invited talks. He has been a member of the International Committee on Nanostructured Materials (ICNM) since 1990, and was its Chairman from 1999-2001. He was the 2007 President of TMS, and was also a founding member of the OSTP subcommittee on Nanoscale Science, Engineering and Technology (NSET), the group which drafted the original National Nanotechnology Initiative (NNI) in 2001. He has been awarded several NIST Innovation and Competence Awards, two NIST EEO/Diversity Awards, the Outstanding Service Award to NIST by the NIST Chapter of Sigma Xi, and was elected a Fellow of IEEE in 2007. For the past 21 years, he has also led a 6month long pre-high school science program for 200 children each year, called 4H Adventure In Science. He is presently a NIST Fellow. Robert Shull is also the son of Dr. Clifford G. Shull, the 1994 winner of the Nobel Prize in Physics.