

TWO TYPES OF BROADENING OF THE ESR LINE IN THE TRANSITION REGION,
EFFECTS OF OXYDIZING ATMOSPHERE

S. Mrozowski

Department of Physics and Astronomy, Ball State University
Muncie, Indiana 47306

The nature of the broadening of the ESR line in carbons occurring in the heattreatment range of 900-1500°C was investigated. It is shown that the broadening upon reheat (Hennig-Smaller effect) is due to impurities; also how this and the silicon broadening can be eliminated. On the other hand, a strong broadening is found to occur upon original

heattreatment or anneal of neutron irradiated material which is connected with some internal structural changes in the carbon material itself. The influence of the chlorine, oxygen and water, as well as of a reheat upon this type of broadening, was studied.