

IMPLICATION OF HETEROGENEOUS QUARTZ FABRIC IN PALEOPROTEROZOIC CONGLOMERATE IN SOUTHEAST RAJASTHAN

BHU, HARSH. Department of Geology, MLS University, Udaipur, India

Microstructure and quartz preferred orientation in Paleoproterozoic quartz/ arkosic conglomerate belonging to the Upper Aravalli sequence in Rajasthan reveal strain partitioning along the length of its three lensoidal outcrops. The conglomerates have undergone two phases of coaxial deformation, which have resulted in increasing the elongation and perfection of long axes orientation in the clasts. The elongation and flattening of clasts is variable along the length of the conglomerate body (Flinn Constant k , varies from 0.50 to 1.97). The clast and matrix fabric has behaved differently to the heterogeneous stresses. The quartz grains of the clast and matrix are strained in the less strained regions. With strain increment the sub-grains formation has taken place on the periphery of the clasts by the process of grain boundary migration. The scattered old rounded grains with peripheral recrystallisation are due to the effect of pure shear in the finite strain. The regions of high strain zones have recrystallised quartz in the clast and matrix. The grains are elongated along the dominant foliation and preserve the deformational feature due to later stresses. The finite fabric of the conglomerate is the result of strain softening processes wherein stress heterogeneity is relaxed by recrystallisation.