

PETROFABRIC STUDIES OF SOME FINE-GRAINED  
ROCKS BY MEANS OF X-RAY DIFFRACTION

by

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ABSTRACT

Crystallographic orientation in rocks too fine-grained to be studied optically can be determined by X-ray diffraction. Absorption and geometric corrections are unnecessary because, by studying hemispherical surfaces, absorption is held constant. Poughquag quartzite, Star Mountain rhyolites, basalt and mylonites were studied. All quartz crystals in the examined samples are parallel to c-axes. The preferred orientations parallel to c-axes or a-axes of feldspar (orthoclase or labradorite), microlites are more common than those perpendicular to c-axes or a-axes of feldspar (orthoclase or labradorite) crystals in extrusive igneous and highly deformed metamorphic rocks. In deducing the flow direction from the fabric diagrams of rhyolitic or basaltic rocks, the preferential orientation has been supposed to be parallel with the lava flow, while in case of highly deformed mylonitic rocks the preferred orientation was considered to be parallel to the movement direction.

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