ELECTRICAL CONDUCTIVITY OF DIOPSIDE UNDER 4 AND 7 GPA AT VARIABLE TEMPERATURES

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Conductivity of a pure diopside disc was measured using a Hioki LCR-Z meter (Model: 3522-50) DC, 1 mHz to 100 KHz. Conductivity measurements were conducted at 4 and 7 GPa and different temperatures, which were varied from 773 K to 1473 K. Using M.S. Paterson's calibration technique we observed that the water content of the diopsidic crystals was 220 ppm H/Si. The water content of the matrix between diopside crystals was 1400 ppm H/Si. When the conductivity data (S/m) are plotted against 1000/T (Temp) diagram, it is observed that for both 4 and 7 GPa runs conductivity increases exponentially. The nature of the conductivity curve is similar to that of olivine as a function of reciprocal temperature.