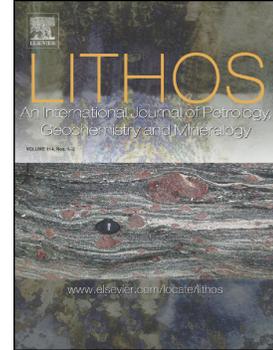


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**Nature of the magma storage system beneath the Damavand volcano (N. Iran):
an integrated study**

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Abstract

Damavand intraplate stratovolcano constructed upon a moderately thick crust (58-67 km) over the last 2 Ma. The erupted products are dominantly trachyandesite-trachyte (TT) lavas and pyroclasts, with minor mafic magmas including tephrite-basanite-trachybasalt and alkali olivine basalts emplaced as cinder cones at the base of the stratovolcano. The TT products are characterized by a mineral assemblage of clinopyroxene (diopside-augite), orthopyroxene (clinoenstatite), feldspar (An_{2-58} , Ab_{6-69} , Or_{2-56}), high Ti phlogopite, F-apatite, Fe-Ti oxides, and minor amounts of olivine (Fo_{73-80}), amphibole and zircon, whereas olivine (Fo_{78-88}), high Mg# (80-89) diopside, feldspar, apatite and Fe-Ti oxide occur in the mafic magmas. The presence of hydrous and anhydrous minerals, normal zonings, mafic cumulates, and the composition of magmatic inclusions in the TT products suggest evolutionary processes in polybaric conditions. In the same way, disequilibrium textures - including orthopyroxene mantled with clinopyroxene, reaction rim of phlogopite and amphibole, the coexistence of olivine and orthopyroxene, reverse, oscillatory and complex zonings of pyroxene and

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