The mechanism of the formation of disequilibrium textures in the Deh-Sard lava flows, south of Baft

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Abstract: The Deh-Sard area is located about 90 km south of Baft in the Kerman province, situated in southern part of Sanandaj-Sirjan zone. It consists of intermittent lava flows (basalt, basaltic andesite and trachyandesite), pyroclastic rocks (various types of tuffs and paloebereccias) and sedimentary rocks (lime stones and shales) of Jurassic age. The Deh-Sard lava flows are essentially composed of plagioclase (both as phenocryst and microlite), clinoxyroxene (diopside-augite) and accessory minerals (opaque and apatite). Secondary minerals such as quartz, chlorite and calcite occur both as a materix and as a pore filling minerals. The main textures of the lava flows are microlitic porphyritic, intergranular and intersertal. The plagioclase crystals have disequilibrium characteristics such as sieve texture, resorption phenomena, reaction with magma, corrosion and oscillatory zoning. These are associated with, mineral grindings and formation of Fe-Ti oxides in the cleavage planes of the clinopyroxenes. All of these evidences confirm the formation of disequilibrium conditions as a result of decompression, caused by fast magma uprising toward the earth surface. In the evolution of these crystals, minor processes such as rapid skeletal growth as a result of quench crystallization, effects of PH2O and magma mixing are also played an important rule.