



## **Synthetic Quartz-Muscovite rocks: preparation and microstructures**

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We describe the preparation of a series of synthetic rocks for experimental rock deformation studies by mixing pure and fine grained Quartz and Muscovite powders in different volume proportions. The characterizations of physical properties and microstructures of the rock aggregates are also taken into account. The powders of Quartz and Muscovite are mixed in five volume proportions where the volume percentages of Quartz in the assemblages are 100, 70, 50, 30 and 0. The synthetic rocks have been fabricated from the powders by first uniaxial cold-pressing (UCP) of the materials at loads 200 MPa and subsequent hot isostatic pressing (HIP) at confining pressures of 165 MPa and a temperature of 690°C. The measured porosities of the rocks are in the range from 7 to 20 % and it increases in samples where muscovite content is high. Synthetic rocks containing Muscovite show sharp hinged micro-folds and a strong first order foliation perpendicular to the uniaxial compression.