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AKF DIAGRAM

Because pelitic sediments are high in Al_2O_3 and K_2O, and low in CaO, Eskola proposed a different diagram that included K_2O to depict the mineral assemblages that develop in them. In AKF diagrams we a***ssu***me that both alkali feldspar and plagioclase feldspar can be present, thus the amount of Al_2O_3 that we use is the excess Al_2O_3 left after allotting it to all of the feldspars. The K minerals (K feldspar, muscovite, biotite, and stilpnomelane) are represented together with minerals containing (Mg, Fe) and (Mg, Fe) + (Al, FeH), whereas Ca minerals cannot be shown.

To obtain the plotting parameters for AKF diagrams, we calculate the following:

$A = [Al_2O_3 + Fe_2O_3] - [Na_2O + K_2O + CaO]$

$K = [K_2O]$

$F = [FeO + MgO + MnO]$

According to the calculation scheme, K feldspar (microcline or orthoclase) is plotted at the K corner of the AKF diagram. The actual composition of muscovite varies considerably. Muscovites which are noticeably poorer in Al and richer in $Si0_2$ and contain (Mg, Fe) are called phengites. Phengites are the typical so-called muscovites in very-low-grade metamorphic rocks. Biotite has a variable composition as well and is represented by a field.

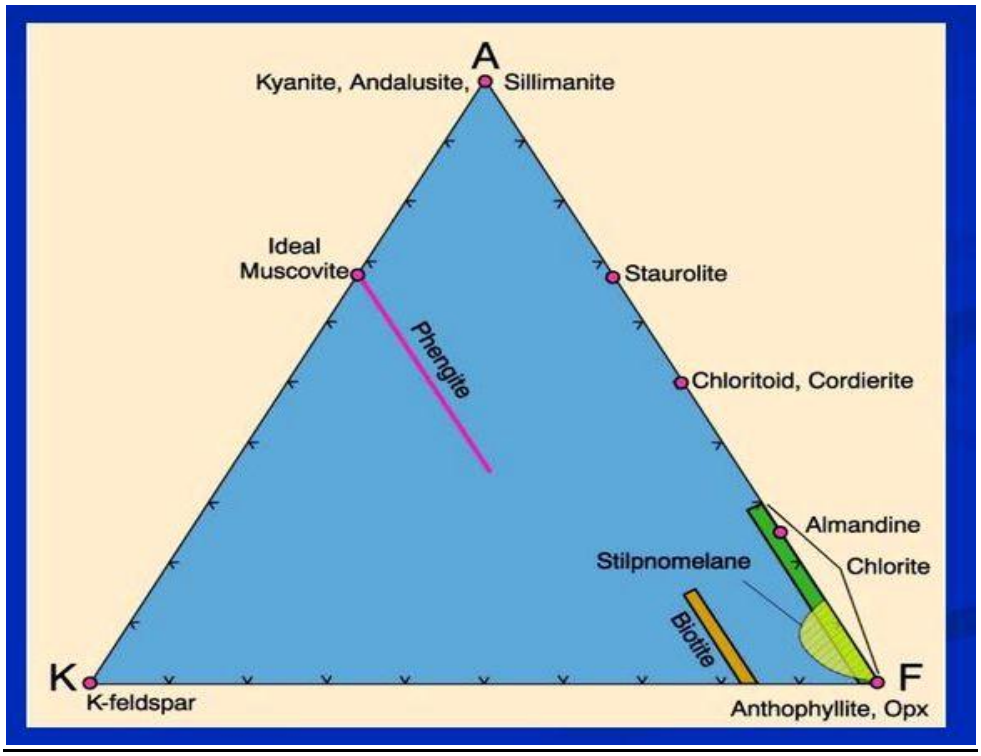

Figure 1-Common mineral composition of metamorphosed pelitic and quartzofeldspathic rocks plotted on the AKF diagrarm.