

Volcanostratigraphy and Petrogenesis of Ciremai Area, West Java, Indonesia

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Ciremai area is one of the Quarternary Stratovolcano located in West Java. Although geological studies of these volcanoes have been presented by some researchers, magma evolution of these volcanoes are still unclear. For this reason, volcanostratigraphy study of Ciremai and attached Gegerhalang volcanoes (Ciremai area) were employed to obtain a more detail orders of volcanic activity. Petrogenesis study were used to gain a better picture of magma evolution. Volcanic rocks of Gegerhalang have sieve, rim pyroxene texture and xenolith that distinguishes from volcanic rocks of Ciremai which have clots texture. Based on plagioclase composition, lavas from Gegerhalang (basalt) have higher anorthite content (An₅₀-An₇₀) than Ciremai (basaltic andesite) with anorthite content An₄₂-An₅₈. Generally, the volcanic rocks from both volcanoes have range of levels K₂O 1.2 – 2.37 %wt. (medium-K to high-K series) (Fig. 1). Harker Variation Diagrams show that crystal fractionation occurs, but there is anomaly magma process which is magma mixing in the late of Ciremai volcanic activity (Fig. 2). From our study, concluded that Gegerhalang eruptions were influenced by assimilation and crystal fractionation while Ciremai eruptions were influenced by crystal fractionation and magma mixing.

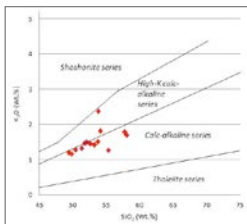


Figure 1: SiO₂ vs K₂O Diagrams (Le Bas *et al.*, 1986).

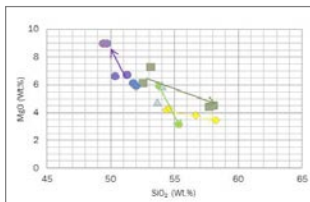


Figure 2: SiO₂ vs MgO (Harker Variation Diagrams).