Petrology and Trace Element Study of Igneous Rock at Ayah, Karangbolong Dome, Kebumen, Central Java

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Abstract	Karangbolong Dome is one of the locations to found volcanic rocks product, but until now there hasn't been any research conducted, so this is the background behind this research. The research objective was to understand igneous rocks petrogenetic in the research area, based on petrology and trace element-REE geochemistry. The research method used was petrographic analysis to understand mineral constituent composition, as well as geochemical analysis of trace elements-REE using ICP-MS (Inductively Coupled Plasma Mass Spectrometry) to understand magma origin geochemistry character and igneous rock tectonic setting in the research area. Based on the petrological and geochemical analysis, the igneous rocks in the research area is mostly basalt-andesite as a shallow intrusions (volcanic neck) on volcanic system. Magma affinity belongs to Tholeiitic-Calc alkaline transition zone with Active Continental Margin (ACM) as a tectonic control. The result of trace element and REE normalize of Ayah basalt-andesite samples against primitive mantle, showing that magma have advanced differentiation or enrichment from incompatible or compatible element, while the normalize comparison result with Galunggung volcano basalt sample, showing a similarity of characters with each other about the trace of elements and their REE distribution, so it can be assumed that both regions have the same tectonic setting by the Active Continental Margin (ACM).
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