Petrografi batuan beku pdf

Academia.edu cookies to personalize content, customize ads, and improve the experience. By using our website, you agree to our collection of information through the use of cookies. For more information, see our Privacy Policy.× Sauri Aulia Putri, Ardian Putra, Mirzam Abdurrachman have done petrographic analysis of tard rocks and silica sintered in Lower Pauh Duo District, South Solok Regency. The purpose of this study is to identify the microscopic appearance of stones that cover the structure and texture of rocks, the mineral composition of the names of rocks, types and stones. The stones were taken to four points in the District of Lower Pauh Duo, while silica sintered was taken around the hot springs of Sapan Maluluang. Stones and silica sintered are made into thin incisions. The analysis was carried out using a polarizing microscope and an X-Ray Diffractometer (XRD). The results of the analysis showed that the rocks in the Lower Pauh Duo district are dominated by basalt rocks. These stones show uniform rock time structures. These basal targeek stones consist of primary and secondary minerals. The main minerals are plagiars, pyrokeen and hornblen. Secondary minerals in chlorine, calcide and quartz. This secondary mineral indicates that the temperature of kecamatan Alam Pauh Duo geothermal reservoirs is between 120ºC and 320ºC. Supreme Energy is 210ºC - 320ºC.Keywords: basalt tardrocks, petrography, reservoir temperature DOI: There are currently no refbacks. Copyright (c) This work is licensed by Creative Commons Attribution-NonCommercial 4.0 International LicensePublished by:Department of Physics, FMIPA Andalas UniversityKampus Unand Limau Manis Padang West Sumatra 25163Telepon 0751-73307Email:jfu@sci.unand.ac.id Page 2 Alexandros Andreas, Ardian Putra 293-298 Rahmi Nanda Pertiwi, Trevi Jayanti Puspasari, Elistia Liza Namigo, Dwi Pujiastuti 305-311 Sauri Aulia Putri, Ardian Putra, Mirzam Abdurrachman 320-327 Lilian Efendi, Wildian Wildian 328-333 You read the free preview pages 6-12 are not shown in this preview. Tardkivikivi petrography - Frozen stones are rocks formed from the freezing of magma / lava or crystallization of minerals, which are bound by interlinking. Magma is a very hot silicate material found in the earth with temperatures between 600 C and 1500 C. Magma temperature depends largely on the chemical composition, depth and pressure at which magma is formed. See also: Geological location of Indonesian Magma composition material in the form of gas (volatile), such as H2O and CO2, not gas (not volatile), which usually consists of Si, O, Al, Fe, Ca, K, Mg, Na and smaller elements such as V, Sr, Rb, you and O, and others. These elements are mentioned, although a small number sometimes has a very important meaning. The elements that also referred to as trace elements. Since almost all magma consists of silicate, the main ingredients of magma are Si and O. Processes for the formation of tardstones can be explained below. Magma crystallization, because magma is a very hot liquid, ions that make up the magma can move freely irregularly. By contrast, when the magma cools down, the movement of ions decreases and ions begin to regulate themselves on a regular basis. This process is called crystallization. In general, the material that is com freezing does not freeze at the same time. The cooling rate of magma has a significant effect on the size of the crystals formed. When magma cooling cools slowly ions have a chance to develop itself, so that it forms a large crystal. If cooling occurs very quickly, then there is no chance that ions form crystals, so the freezing result produces irregular atoms (hablur), called glass minerals. Magma differentiation Is the process of separating homogeneous magmas in fractions with different compositions, due to effects, among other things: the migration of ions or molecules in magmas. The transfer of magma differentiation gases takes place during the freezing of magma, where the crystals are not formed together, the crystals and magma fluid, called crystals differentiation, are released. See also about: Indonesian State Map Picture: Magma Assimilation Magma Differentiation Process is a process of reaction or dissolution between magma and surrounding rocks (wall of stone). It usually occurs when alkaline magma invades acidic rocks, such as gabbroid magma from the invasion of granite rocks, resulting in dioid tard rocks (intermediates). Figure : Magma Assimilation Process Mineral composition Frozen stonesMineral minerals, which form tard rocks, are determined by the chemical composition of the magma that forms them. Just as frozen stones are known to have variations, magmapun is a great choice. From this it can be said that the same magma is likely to produce a diverse mineral content. Based on the nature and composition of some geologists distinguish between several types of magma, namely: Magma acid Magma semi-acid (intermediate) Magma base magma ultra base Depending on the magma is, among other things, produced by some kind of frozen stones. Acidic magma produces acidic stones that correspond to its composition consisting of granite and syenite. Semi-acidic (intermediate) magma begins to produce semi-acid stones in the composition of diorite-andesite. Alkaline magma forms the alkaline stones of gabro-basalt composition. While the ultra base magma will produce very based composition stones such as peridotit and snake rock groups. Minerals that are and still exist in the liquid magma environment, react to the rest of the magma liquid and produce the next mineral, as seen in the arrangement or series process of crystallization of magma known as the Bowen Reaction Series. From the Bowen Reaction Series plan, there are 3 series of mineral formations for magma crystallization: Series 1 The first series consists of minerals of olive, pyroxine, amphibious, and biotite. This group is a group of mafia minerals (magnesium-ferum-calcium) or dark colored minerals. This series of reactions is called a intermittent series, which is a reaction that produces individual minerals, where minerals first form separate themselves from the liquid and form stones. While some minerals that also move magma solution changes or reacts again to liquid and make up other minerals. This will further affect the composition of the solution. Series 2 The second series consists of feldspar minerals especially family plagioklas (Anorthit-Bytwonit-Labradorit-Andesit-Oligoklas-Albit) and the ortoklas family. This part is a continuous series (Continous Series), which is a mineral that was formed first can change its composition continuously, reacting to the rest of the Magma fluid. Thus, the imperfect crystallised mineral continues to form crystals in its group series, with different composition presentations. Changes in composition may include zoning or twinning changes, or changes in crystal. Series 3 The third series is later formed a series of minerals that do not depend on previously formed minerals. These minerals are only formed from the rest of the magma and are largely determined by the nature and composition of the magma and the change in temperature conditions. See also about: Philippines Map Pictures: Bowen Reaction Series Texture Frozen RocksText has an appearance ratio of components of rock, which may reflect the history of its occurrence/petrogenesa tard rocks. Texture depends on several factors, namely: the level of crystallization (crystallization) Large grain (granulating) Crystalline form (Fabric) Crystallineness Relationship Crystallization crystallization is the level of crystallization of tardkivim during the formation of the rock. Crystallized in its function is used to show how much is crystalline and which is not crystal-shaped, and it can also reflect the freezing speed of magma. If magma in your freezing is slow then the crystal is harsh. If freezing occurs quickly, then the crystal is smooth, but if cooling occurs very quickly, then the crystal is amorphous. Crystalline divided by: holocrystalline; St frozen consists entirely of crystals. Photo : Holocrystalline appearance of hypocrystalline thin incisions; i.e. tard rocks partly placed in glass and partly crystal mass. Photo : Hypocrystalline appearance in holochyalial cuttings; i.e. rocks consisting entirely of the mass of glass. Photo : Holohyclin appearance with a thin incision in the graininess of a large grain of tardstones that is divided into fantastic, porphytic and afanitic. The explanation is as follows: Fantastic; the size of the crystal can be distinguished from the megascopic or ordinary eyes. Photo: Fantastic look with porphytic thin incisions; the presence of large minerals in the main mass. Photo : Porphyitic appearance afanitic thin incisions; the size of the crystal is indistinguishable from the megascopy should be by means of a microscope. Photo : Fanitic appearance of sheer incisions Crystal Shape is the character of crystal stones. The shape of this crystal can be distinguished in two dimensions and three dimensions. Three crystalforms are known in two dimensions, namely: euhedral; where the boundary between the minerals is the original form of the crystalline field. Photo : Euhedral appearance subhedral thin incisions; where part of the mineral limit is no longer visible. Photo : Subhedral appearance anhedral thin incision; if the mineral no longer has the original boundary field. Photo : Anhedral appearance of thin incisions Although three dimensions are known three types of crystal, namely: skeletal; The three-dimensional crystal shape is the same length. Photo : Skeletal appearance with thin dendritic incisions; The three-dimensional Crystal shape is longer Photograph: Dendritic appearance in the thin incision of Embayed; Irregular crystal shape Photograph: Embayed Appearance Thin Incisions Relationships are the ratio of crystals, which is one of the other tardstones. It is possible to distinguish between 2 and equigranular and equine. Equigranulaulaarne, when the size of the crystals that make up the stones is the same size. Based on the ideals of crystals, they are distinguished from the above: Panidiomorphic, when most crystals are made up of euhedral crystals. Photo : Panidiomorphic appearance of Hipidiomorphic Thin incisions, when most crystals consist of subhedral crystals. Photo : Hypnomorphic appearance of Allotriomorphic thin incisions, when most crystals consist of anhedral crystals. Photo : Allotriomorphic appearance inequigranular thin incisions, when the size of the crystals that make up the tard rocks is not so large. A large mineral is called phenoth and the second is called the main mass. Can be distinguished from several types namely: porphytic, composed of fenori - phenor embedded in the base mass crystalline. Photo : Porphyitic appearance of vitrophic Thin Incision, phenols embedded in the base mass of glass. Photo : Vitrophic appearance of Poikilitik Thin Incision, the presence of small minerals located mineral. Photo : Poikilitik appearance ophitic Thin Incision, when the plagiars formed first then grow with pyroxin. Photo : Ophitic the appearance of intersetial Thin incisions, when some minerals - plagioklas minerals are occupied by pyroxin minerals. Photo : Intersetial appearance trakhitic Thin Incisions, which shows themiklithic alignment usually found on the stage. Photo : Trakhitik appearance thin incisions Intergrowth, the appearance of more than one mineral that grows together Photo: Intergrowth Appearance Thin Incision Graphic, is the growth of some minerals shaped like nails and cone. Photo: Graphic appearance in Perth's thin incision, the appearance of several minerals that grow together with K-Feldspar and acidic plagiares, which are usually relatively parallel towards the hemisphere field. Photo : Perth appearance mymerkitic Thin Incision, a texture where quartz resembles the irregular position of the fingers. Photo : Mymerkitic appearance of Corona Thin Incision, the appearance of oliviin minerals that were previously formed and surrounded by pyroxins and hornblende. Photo : Corona's appearance in the thin incision of the Frozen Rock Structure has a rock appearance that explains the process and place of formation. Some of the appearance of tardkivim structures petrographically include: Massive, showing the compact and dense arrangement of minerals - minerals for the elderly and the absence of pores - pores. Photo : Massive structure appearance of a thin incision in Vesicle, with holes - holes that in the corner result in the release of gases when the stones are formed. Photo: Appearance of vesicle structure of Scoria Thin Incision, a structure that shows very large and irregular pores in the base mass of glass. Photo : The appearance of the Scoria structure of the Amygdaloidal Thin Incision, a structure that shows holes filled with secondary minerals. Photo : The appearance of the amygdaloidal structure with a thin incision flow, the flow structure of the stones characterized by the orientation of prismatic minerals. Photo : Appearance flow structure thin incision Com, which shows minerals that extend in the same direction as regular shapes. Photo : Appearance of com-structure in the classification of thin cutting stones based on the chemical properties and mineral composition of tard rocks, which are divided; acidic tardstones, medium tardstones, baastargeel rocks and ultrabasa tard rocks. Tard rocks Acid tardic acids usually consist of acidic minerals such as quartz, orthoclas, biotitis, musk and hornblende, where the content of quartz (SiO2) exceeds 66%. Acidic tardstones can be found in the field in the form of batolite, lakkolite, lapolitis, and other large intrusions. Acid tardstones form a large intrusion due to their high viscosity, resulting in magma can pass through narrow cracks in the form of a ditch or flower. Examples of acidic tard rocks include granite and trakits. Photo : Granite appearance with sheer incisions Photograph: Trakit Appearance Thin incisions Frozen Stones Intermediet Intermediet Igneous stones are generally darker, these stones are mostly lakkolite, lapoliti, ditch and windowsill. These forms of intrusion are regulated by the viscosity of the intermediate magma. The composition of the type feldsfar is beginning to be the balance of potassium chloride feldsfar and plagioklas. The freezing temperature is about 9000C. Based on a comparison of the mineral type feldspar, intermediet tard rocks can be divided into two groups, namely: stones composition of potassium chloridefeldsfar and plagioklas in almost the same quantities, such as granodiori, monzonit, latit and dasit. Stones dominate the composition of plagiarses than potassium chloride feldsfar, such as diorite, tonalii, andesite and dasit. Intermediet tard rocks show the most sferoid weather because they contain many feldsfar minerals. Feldsfar minerals that experience weather can be kaolin minerals. Both spheroidal and kaolinization symptoms can be found in intermediet tardstones, which have undergone an evaluation. Photo : The appearance of Diorit thin incision Tardkivi bases frozen bases show a color that is generally dark or black due to the presence of feromagneesium minerals and plagiarc minerals that are alkaline. In alkaline tard rocks, water-ulation vesicula is sometimes found as volatile materials. These frozen stones are also found in the form such as block placement or foe-phoe, it has typical properties of magma that are still liquid. Examples of alkaline tardstones are gabro and basal. Photo : Gabro Appearance Thin incisions Photograph: Basal Appearance Sheer Incisions Ultrabasa igneous Rocks Ultra base tardstones are stones consisting of ferromagneesium minerals, so the appearance is very dark or black. Due to the freezing conditions of ultrabasa tard rocks at high depth and pressure, as well as due to the crystallization of constituents, crystallizing at relatively the same temperature, there is no mineral freedom to grow properly, so that it forms the crystals/minerals that form ultrabasa frozen, i.e. anhedral-subhedral form. The ultrabasa tard rock example is dunit. Photo : Dunit look thin incision