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A Review of the Effects of Tectonic Stress Chemistry on Mineralization Processes

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Perspective

Introduction

The mineralization process, which is widely regarded to be the key governing factor in the accumulation of economic resources (e.g., gold, coal, oil, and gas) through deformation, frequently involves tectonism [1]. Numerous experimental and theoretical studies have suggested that tectonic stress not only causes physical changes in rocks and minerals, but also encourages chemical changes by acting directly on chemical bonds and producing bond scission or regeneration, a process known as tectonic stress chemistry processes induced by tectonic activity have provided novel concepts and evidence for explaining the chemical structural development of coal, hydrocarbon production, organic and inorganic graphitization, and hydrothermal mineralization under shear stress in recent years. These preliminary investigations have provided motivation and insight into how tectonic stress influences the chemical structures of minerals, rocks, and even ore-forming fluids throughout the mineralization process.

We review the concept of TSC the TSC process in the formation of shear zone type gold deposits from stress concentration, brittle fracturing, sudden reduction of fluid pressure, and flash vaporization to gold precipitation mechanisms of the macromolecular structural evolution of coal and gas generation under shear stress from deformation experiments and molecular dynamic simulations and coal-derived graphitization caused by preferrex.

Description

Shear zones are where gold deposits originate.

Discussions about the fundamental elements that influence gold precipitation

Aqueous fluids take ore elements from minerals and magmas, transport and precipitate them as economic concentrations in ores [2]. whose content is three to six orders of magnitude greater than that in crustal and mantle rocks, and are required for the creation of hydrothermal deposits on Earth Mineral prospecting requires a deeper understanding of the chemical processes that contribute to the creation of ore deposits. The influence of temperature in hydrothermal ore fluids has been the subject of previous research.

Mechanical energy, unlike thermal energy, operates on a separate mechanism, albeit both increases the number of molecules that cross a reaction barrier Thermal energy does not lower the barrier; instead, it raises the internal molecular energy of the molecules, allowing them to pass it more easily. Stress, on the other hand, alters the barriers and local minima in potential energy landscapes. As a result, by decreasing the effective activation energy of a chemical transformation, it creates gentle reaction conditions. Stress can sometimes cause a significant shift in the response equilibrium.which is not easily possible by thermal energy As shown by a visual experiment, when a compressed or stretched spring and a relaxed spring are placed in an acid solution with the same concentration, the former will corrode more rapidly than the latter.

How tectonic stress impacts gold mineralization's chemical process

Fused aromatic rings and aliphatic structures are two fundamental components of coal's macromolecular structure. Understanding the coalification process and the formation of associated gas, which are widely assumed to be regulated by temperature and time, begins with the evolution of these structures [3]. Tectonic stress is thought to impact physical attributes via changing the physical state of coal, such as deformation and destruction. Experiments with high-temperature and high-pressure deformation have proven that the phenomena of gas production occurs in coal under stress. Gas was created in 17 out of 28 samples in the coal deformation experiment conducted by, with outbursts even occurring. In Jiang experiment. The identical phenomenon occurred. Unfortunately, the nature and amount of the generated gas were not recorded in these early trials.

Conclusions

Tectonism can produce physical deformation as well as chemical reactions in rocks, minerals, and even ore-forming fluids, according to recent data [4,5]. TSC processes generated by tectonic activity, for example, have given rise to novel theories and data to explain the chemical structural development of coal, hydrocarbon production, organic and inorganic graphitization, and hydrothermal mineralization under shear stress.

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Conflict of Interest

The authors declare that they are no conflict of interest.

References

1. J. Ahern Greenways as a planning strategyLandscape Urban Plann 33 (1-3):131-155.
2. Bao Jie Z, Shen H.B. Wang L.G (2019) An approach to examining performances of cool/hot sources in mitigating/enhancing land surface temperature under different temperature backgrounds based on landsat .Image Sustain Cities Soc 44:416-427.

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3. Guo R, Wu T, Liu M (2019) The construction and optimization of ecological security pattern in the harbin-changchun urban agglomeration. ChinaInt J Environ Res Public Health 16 (7):1190.

4. Yu H, Huang J, Ji C Z (2021) Construction of a landscape ecological network for a large-scale energy and chemical industrial base a case study of Ningdong, ChinaLand 10 (4): 344.

5. Uusi J, Kämppä B. Braskerud H (2008 UusitaloBuffer zones and constructed wetlands as filters for agricultural phosphorusJ. Environ. Qual., 29 (1):151-158