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Wood preservatives potential of geothermal energy resources from some regions of Turkey

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Abstract: Geothermal energy sources have been used in different application areas all over the world. In order to be answer of the needs, various institutions and organizations has active on the geothermal energy technologies. Geothermal energy production has an activity that provides high value-added socio-economic positive contributions for national and regional economic development without damaging the geothermal resources and geothermal activities. Therefore, it is important to evaluate the utilization process of geothermal energy for different industrial uses and to make recommendations for this process. Turkey is an important country with geothermal energy resources containing rich chemical or mineral substances. In order to be use economically, it must also be determined the wood preservatives potential of these resources. The purpose of this study is to discuss from the perspective of wood preservatives potential of different geothermal energy resources from some regions of Turkey. Geothermal energy resources whose analyzed hydrogeochemical content from geothermal fields where hot water + steam resources are dominant in Afyonkarahisar, Kutahya and Sakarya regions of Turkey were studied especially for this study. The study used as materials the data obtained from current standards, literature documentation and relevant institutions or organizations. After analysis of the data, for these geothermal waters, a data table was created by using different variables such as temperature, flow rate, depth and pH values, chemical contents, concentrations. The table was investigated from wood protectants perspective, and the wood preservatives contents of geothermal waters were determined. Total numbers and concentrations were detected for chemical or mineral objects which compatible with the standards and literature. The findings were discussed in the context of water-based impregnants at the scale of the chemical or mineral substances added to classic wood preservatives. At the present time, the forest products industry provides employment by making significant contributions to national and regional economic development. However, both there are problems in the import of wood preservatives and the use restrictions of chemicals threatening human and environmental health has increased increasingly. For this reason, in out country, determination of potential as a alternative reference origin of an renewable natural resource for wood impregnants production has important in terms of developmen of human and environmentally friendly chemicals and reducement of import burden and external dependency.

Keywords: Geothermal energy, Wooden, Wood preservatives