

# ACCUMULATION OF LOW-POTENTIAL THERMAL ENERGY

## MAGAZYNOWANIE NISKOTEMPERATUROWEJ ENERGII GEOTERMALNEJ

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### Abstract

*The article presents interpretation of accumulation of thermal energy in a vertical borehole. It describes measuring device and final graph of measurement. It studies mainly the influence of water on storage capacity of the vertical borehole.*

### Streszczenie

*Artykuł przedstawia zagadnienie magazynowania ciepła w pionowym odwiercie w gruncie. Przybliża on zastosowane urządzenia pomiarowe i schemat układu pomiarowego, a także analizuje wpływ wody na zdolności magazynowania ciepła w pionowym odwiercie.*

### References

- [1] Baehr H.D., Stephan K., *Heat and mass transfer*. Berlin: Springer, 2006, p. 688.
- [2] Dincer I., Rosen M.A., *Thermal energy storage: Systems and applications*. Chichester: John Wiley and Sons 2002, p. 59
- [3] Lenhard R., Malcho M., *Numerical simulation device for the transport of geothermal heat with forced circulation of media*. Mathematical and Computer Modelling, ISSN 0895-7177, vol. 57, iss. 1-2, (2013), pp. 111-125.
- [4] Lenhard R., Gavlas S., Malcho M., *Numerical simulation of borehole model which utilizes low-potential geothermal heat*. Experimental fluid mechanics 2011: proceedings of the international conference.
- [5] Nosek R., Jandačka J., Szlek A., *Numerical modelling of coal combustion in domestic boiler*. Archivum combustionis, ISSN 0208-4198, vol. 30, no. 3 (2010), pp. 167-175.
- [6] Jakubský M., Lenhard R., Jandačka J., *Výstavba zariadenia na simuláciu transportu nízopotenciálneho geotermálneho tepla v laboratóriu*. ALER 2011, Žilina: EDIS Žilina, pp. 88-102.
- [7] Kolková Z., Matušov J., Mokry M., *The concept of intelligent building in Research Centre in Žilina*. The application of experimental and numerical methods in fluid mechanics and energy 2016: XX. international scientific conference: proceedings, Slovakia, Žilina: University of Žilina, 2016, ISBN 978-80-554-1193-4, pp. 97-100.
- [8] Kolková Z., Matušov J., Mokry M., *Intelligent buildings and technologies*. SGEM 2016: 16th international multidisciplinary scientific geoconference: conference proceedings, 2016, ISSN 1314-2704, pp. 451-456.