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Breaking Ground on the Moon: Regolith as a Key Component in Lunar Thermal Energy Storage.

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Regolith, abundant on the lunar surface, possesses properties that make it an attractive candidate for thermal energy storage (TES). It's porosity and thermal conductivity allow for efficient heat transfer and heat retention, crucial for storing thermal energy during lunar day-night cycles. By using regolith as a TES medium, lunar habitats and infrastructures can effectively capture excess heat during the day and release it when needed during cold lunar nights.

TES using regolith holds immense potential for addressing the energy and thermal management challenges inherent to lunar exploration and habitation. By harnessing the unique properties of regolith as a storage material, innovative TES systems can contribute to the sustainability, resilience, and advancement of lunar infrastructure, paving the way for long-term human presence on the Moon.

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