

26<sup>th</sup> International Conference on  
Nanotechnology and Nanomedicine

May 13, 2022 | Webinar

Received date: 09-05-2022 | Accepted date: 10-05-2022 | Published date: 25-05-2022

## Brief study of local beeswax as an energy storage material

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Beeswax is primarily produced by specialized beeswax factories across the world. Beeswax is a phase change material with high heat capacity. The production procedures have a high impact on the quality of beeswax. Melting and chemical extraction are the two procedures for extracting wax. Melting is the most used method. Wax can be melted using hot water, steam, electricity, or solar energy. Chemical solvent extraction is only possible in a laboratory. The use of phase change materials (PCMs) as thermal energy storage devices is gaining popularity in heating and cooling applications. When these substances change phase, such as from solid to liquid or liquid to gas, they absorb a huge quantity of heat while maintaining a steady temperature. To study the thermal properties of beeswax as a phase-changing material, X-ray diffraction (XRD) and fourier transform infrared (FT-IR) spectroscopy were performed.

### Recent Publications

1. Brent A Wacaser, Mark C Reuter, Maha M Khayyat, Cheng-Yen Wen, Richard Haight, Supratik Guha, Frances M Ross, et al. Growth Systems, Structure and Doping of Aluminum Seeded Epi-

taxial Silicon Nanowires. Nano Lett. 2009; 9(9): 269-301

2. Maha M Khayyat, Brent A Wacaser, Mark C Reuter, Frances M Ross, Devendra K Sadana, Tze-Chiang Chen. Nanoscale chemical templating of Si-NWs seeded with Al. Nanotechnology. 2013; 24(23): 235301
3. Maha M Khayyat. Silica Microspheres for Economical Advanced Solar Applications. Crystals. 2021; 11(11): 1409.

### Speaker Biography

Eman Dayl is a researcher in Physics, she has experience in the field of academic teaching and in the research field. She has achieved a paper which includes some topics of water bio-filtration research. Also, she has achieved patents about the topic as well and she has done it at King Abdulaziz City for Science and Technology.

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