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### Education Information

Doctorate, Karadeniz Technical University, Fen Bilimleri Enstitüsü, Turkey 2017 - 2022

Postgraduate, The University of Manchester, Faculty Of Science And Engineering, School Of Materials, United Kingdom 2015 - 2016

### Foreign Languages

English, B2 Upper Intermediate

### Dissertations

Doctorate, BİNALARDA ISIL ENERJİ DEPOLAMA AMAÇLI KOMPOZİT FAZ DEĞİŞİM MALZEMELERİNİN GELİŞTİRİLMESİ, KARAKTERİZASYONU VE LABORATUVAR ÖLÇEKLİ UYGULAMALARI, Karadeniz Technical University, Fen Bilimleri Enstitüsü, 2022

Postgraduate, Stable Aqueous Dispersions of Reduced Graphene Oxide with 1-Pyrenesulphonic Acid Sodium Salt, University of Manchester, Faculty Of Science And Engineering, School Of Materials, 2016

### Research Areas

Metallurgical and Materials Engineering, Material science and engineering, Nanomaterials, Engineering and Technology

### Academic Titles / Tasks

Assistant Professor, Karadeniz Technical University, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği, 2023 - Continues

Research Assistant, Karadeniz Technical University, Mühendislik Fakültesi, Metalurji Ve Malzeme Mühendisliği, 2017 - 2023

- I. **Phase change material incorporated paper pulp sludge/gypsum composite reinforced by slag and fly ash for energy efficient buildings: Solar thermal regulation, embody energy, sustainability index and cost analysis**  
Kucukdogan N., Sutcu M., Ozturk S., Yaprak H., Memis S., Gencel O., Ustaoglu A., SARI A., HEKİMOĞLU G., Erdogmus E. *Energy and Buildings*, vol.325, 2024 (SCI-Expanded)
- II. **Sustainable polyurethane biocomposite foams by improved microstructure, acoustic characteristics, thermoregulation performance and reduced CO2 emission through phase change material integration**  
Gencel O., Aydoğmuş E., GÜLER O., Ustaoglu A., SARI A., HEKİMOĞLU G., Bozkurt A., Ozbakkaloglu T. *Journal of Energy Storage*, vol.103, 2024 (SCI-Expanded)
- III. **Hazelnut shell-based activated carbon/carbon nanotubes/palmityl alcohol as new form-stable phase change material with enhanced energy storage capacity and thermal conductivity**  
Gu X., Huseien G. F., KAR T., SARI A., Karaahmet Z., Gencel O., HEKİMOĞLU G., ÇAKIR E. *Journal of Energy Storage*, vol.103, 2024 (SCI-Expanded)
- IV. **Properties of foam concrete containing phase change material impregnated pumice**  
Kam E., Yaraş A., Ustaoglu A., HEKİMOĞLU G., SARI A., Erdoğmuş E., Gencel O. *Construction and Building Materials*, vol.446, 2024 (SCI-Expanded)
- V. **Energy- efficient cementitious mortar containing clay based shape-stable phase change material: Development, characterization and temperature controlling performance**  
Bayram M., Gencel O., SARI A., Ahmed A., Zami M. S., Erdogmus E., HEKİMOĞLU G., Ustaoglu A., Ozbakkaloglu T. *Construction and Building Materials*, vol.442, 2024 (SCI-Expanded)
- VI. **Advancing thermal control in buildings with innovative cementitious mortar and recycled expanded glass/n-octadecane phase change material composites**  
Yaraş A., Bayram M., Ustaoglu A., Erdoğmuş E., HEKİMOĞLU G., SARI A., Gencel O., Tyagi V., Ozbakkaloglu T. *Renewable and Sustainable Energy Reviews*, vol.202, 2024 (SCI-Expanded)
- VII. **Production and assessment of UV-cured resin coated stearyl alcohol/expanded graphite as novel shape-stable composite phase change material for thermal energy storage**  
GÜLER O., Er Y., HEKİMOĞLU G., Ustaoglu A., SARI A., Subaşı S., Maraşlı M., Gencel O. *Applied Thermal Engineering*, vol.247, 2024 (SCI-Expanded)
- VIII. **Physico-mechanical properties and thermal monitoring performance of thermal enhanced cement slurry-coated LWAs containing microencapsulated phase change material**  
Emiroğlu M., ÖZGÜLER A. T., NAS M., Subasi S., SARI A., HEKİMOĞLU G., Ustaoglu A., Gencel O. *Materials Today Sustainability*, vol.26, 2024 (SCI-Expanded)
- IX. **A novel cement mortar comprising natural zeolite/dodecyl alcohol shape stable composite phase change material for energy effective buildings**  
SARI A., NAS M., YEŞİLATA B., Ustaoglu A., Erdoğmuş E., Torlaklı H., HEKİMOĞLU G., Gencel O. *Journal of Energy Storage*, vol.87, 2024 (SCI-Expanded)
- X. **Innovative cementitious mortar incorporated with sepiolite based shape-stable phase change material for thermal controlling of buildings**  
TOPÇU İ. B., Bayram M., Ustaoglu A., HEKİMOĞLU G., Erdoğmuş E., SARI A., Gencel O., Ozbakkaloglu T. *Construction and Building Materials*, vol.426, 2024 (SCI-Expanded)
- XI. **Enhancing sustainability with waste hemp-shive and phase change material: Novel gypsum-based composites with advanced thermal energy storage properties**  
Gencel O., GÜLER O., Ustaoglu A., Erdoğmuş E., SARI A., HEKİMOĞLU G., BOZTOPRAK Y., Subaşı S. *Journal of Cleaner Production*, vol.451, 2024 (SCI-Expanded)
- XII. **Microencapsulated phase change material/wood fiber-starch composite as novel bio-based energy storage material for buildings**  
Öztürk G., Temiz A., Hekimoğlu G., Aslan M., Köse Demirel G., Erdeyer Ö. N., Sarı A., Gencel O., Subaşı S. *Journal of Energy Storage*, vol.84, 2024 (SCI-Expanded)
- XIII. **Novel integration of recycled-hemihydrate phosphogypsum and ethyl palmitate in composite phase change material for building thermal regulation**

- Kocyigit Ş., GÜLER O., HEKİMOĞLU G., Ustaoglu A., Erdoğmuş E., SARI A., Gencil O., Ozbakkaloglu T.  
Journal of Cleaner Production, vol.445, 2024 (SCI-Expanded)
- XIV. **A Novel Layered Double Hydroxide and Dodecyl Alcohol Assisted PCM Composite with High Latent Heat Storage Capacity and Thermal Conductivity**  
Al-Ahmed A., SARI A., Khan F., Al-Rasheidi M., HEKİMOĞLU G., Afzaal M., Alsulami A. A., Dafalla H., Salhi B., Alsulaiman A. F.  
JOURNAL OF THERMAL SCIENCE, vol.33, no.2, pp.537-547, 2024 (SCI-Expanded)
- XV. **3D-printed polylactic acid-microencapsulated phase change material composites for building thermal management**  
Bayram M., Ustaoglu A., Kursuncu B., HEKİMOĞLU G., SARI A., Uğur L. O., Subasi S., Gencil O., Ozbakkaloglu T.  
Renewable and Sustainable Energy Reviews, vol.191, 2024 (SCI-Expanded)
- XVI. **Characterisation and energy storage performance of 3D printed-photocurable resin/microencapsulated phase change material composite**  
Er Y., GÜLER O., Ustaoglu A., HEKİMOĞLU G., SARI A., Subaşı S., Gencil O., Maraşlı M.  
Thermal Science and Engineering Progress, vol.48, 2024 (SCI-Expanded)
- XVII. **Effects of graphene doping on shape stabilization, thermal energy storage and thermal conductivity properties of PolyHIPE/PEG composites**  
Kahraman Döğüşcü D., SARI A., HEKİMOĞLU G.  
Journal of Energy Storage, vol.76, 2024 (SCI-Expanded)
- XVIII. **Utilizing biomass-derived activated carbon hybrids for enhanced thermal conductivity and latent heat storage in form-stabilized composite PCMs**  
HEKİMOĞLU G.  
ENERGY SOURCES PART A-RECOVERY UTILIZATION AND ENVIRONMENTAL EFFECTS, vol.46, no.1, pp.11395-11412, 2024 (SCI-Expanded)
- XIX. **Thermal energy storage performance evaluation of bio-based phase change material/apricot kernel shell derived activated carbon in lightweight mortar**  
Hekimoğlu G., Sarı A., Gencil O., Önal Y., Ustaoglu A., Erdogmus E., Harja M., Tyagi V.  
JOURNAL OF ENERGY STORAGE, vol.73, 2023 (SCI-Expanded)
- XX. **Thermophysical properties and solar thermal energy storage performance of phase change composites manufactured by vat photopolymerization 3D printing technique**  
Er Y., Güler O., Hekimoğlu G., Nodehi M., Ustaoglu A., Sarı A., Gencil O., Ozbakkaloglu T.  
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- XXI. **Developing Wallpaper/Dodecyl alcohol composite phase change materials as new kind of wall covering elements for building interior thermoregulation**  
Gencil O., Ustaoglu A., Sarı A., Hekimoğlu G., Sutcu M., Tozluoglu A., Tutus A., Cicekler M., Veer Tyagi V.  
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- XXII. **Fuel, cost, energy efficiency and CO<sub>2</sub> emission performance of PCM integrated wood fiber composite phase change material at different climates**  
Frahhat N. B., Ustaoglu A., Gencil O., SARI A., HEKİMOĞLU G., Yaras A., Del Coz Díaz J. J.  
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- XXIII. **Shape stabilized microcrystalline cellulose/methyl stearate/graphene nanoplatelet composite with enriched thermal conductivity and thermal energy storage/release performance**  
HEKİMOĞLU G., Çakır E., SARI A., Gencil O., Tyagi V., Sharma R.  
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- XXIV. **Thermal performance analysis of novel foam concrete composites with PCM for energy storage and environmental benefits in buildings**  
Erdogmus E., Yaras A., Ustaoglu A., HEKİMOĞLU G., SARI A., Gencil O.  
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- XXV. **Expanded glass sphere/lauryl alcohol composite in gypsum: Physico-mechanical properties, energy storage performance and environmental impact assessment**  
Ustaoglu A., Yaras A., HEKİMOĞLU G., Erdogmus E., SARI A., Gencil O.

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- XXVI. **Microencapsulated phase change material incorporated light transmitting gypsum composite for thermal energy saving in buildings**  
Gencil O., Bayram M., Subaşı S., HEKİMOĞLU G., SARI A., Ustaoglu A., Marasli M., Ozbakkaloglu T.  
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- XXVII. **Activated carbon/expanded graphite hybrid structure for development of nonadecane based composite PCM with excellent shape stability, enhanced thermal conductivity and heat charging-discharging performance**  
HEKİMOĞLU G., SARI A., Gencil O., Tyagi V., Sharma R.  
THERMAL SCIENCE AND ENGINEERING PROGRESS, vol.44, 2023 (SCI-Expanded)
- XXVIII. **Thermal energy saving and physico-mechanical properties of foam concrete incorporating form-stabilized basalt powder/capric acid based composite phase change material**  
Kocyyigit F., Bayram M., HEKİMOĞLU G., Cay V. V., Gencil O., Ustaoglu A., SARI A., Erdogmus E., Ozbakkaloglu T.  
JOURNAL OF CLEANER PRODUCTION, vol.414, 2023 (SCI-Expanded)
- XXIX. **Expanded waste glass/methyl palmitate/carbon nanofibers as effective shape stabilized and thermal enhanced composite phase change material for thermal energy storage**  
Singh P., Sharma R., HEKİMOĞLU G., SARI A., Gencil O., Tyagi V.  
JOURNAL OF ENERGY STORAGE, vol.64, 2023 (SCI-Expanded)
- XXX. **Effect of carbon nanotube and microencapsulated phase change material utilization on the thermal energy storage performance in UV cured (photoinitiated) unsaturated polyester composites**  
Subasi A., Subasi S., Bayram M., SARI A., HEKİMOĞLU G., Ustaoglu A., Gencil O., Ozbakkaloglu T.  
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- XXXI. **Light transmitting glass fiber reinforced cementitious composite containing microencapsulated phase change material for thermal energy saving**  
Gencil O., SARI A., Subasi S., Bayram M., Danish A., Marasli M., HEKİMOĞLU G., Ustaoglu A., Ozbakkaloglu T.  
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- XXXII. **Development, characterization, and performance analysis of shape-stabilized phase change material included-geopolymer for passive thermal management of buildings**  
Gencil O., Harja M., SARI A., HEKİMOĞLU G., Ustaoglu A., Sutcu M., Erdogmus E., KAPLAN G., Bayraktar O. Y.  
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- XXXIII. **Thermal energy storage characteristics of polyacrylic acid/dodecanol/carbon nanofiber composites as thermal conductive shape-stabilized composite phase change materials**  
HEKİMOĞLU G., SARI A., Gencil O., Tyagi V. V.  
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- XXXIV. **Development and characterization a novel leakage-proof form stable composite of graphitic carbon nitride and fatty alcohol for thermal energy storage**  
Singh P., Sharma R. K., Goyal R., HEKİMOĞLU G., SARI A., Rathore P. K. S., Tyagi V. V.  
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- XXXV. **Characteristics, energy saving and carbon emission reduction potential of gypsum wallboard containing phase change material**  
Yaras A., Ustaoglu A., Gencil O., SARI A., Hekimoglu G., Sutcu M., Erdogmus E., KAPLAN G., Bayraktar O. Y.  
JOURNAL OF ENERGY STORAGE, vol.55, 2022 (SCI-Expanded)
- XXXVI. **Development, characterization and thermo-regulative performance of microencapsulated phase change material included-glass fiber reinforced foam concrete as novel thermal energy effective-building material**  
Gencil O., Subasi S., Ustaoglu A., SARI A., Marasli M., HEKİMOĞLU G., Kam E.  
ENERGY, vol.257, 2022 (SCI-Expanded)
- XXXVII. **Properties of eco-friendly foam concrete containing PCM impregnated rice husk ash for thermal management of buildings**  
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- XXXVIII. **Properties of Scots pine wood impregnated with capric acid for potential energy saving building material**  
Amini M. H. M., TEMİZ A., HEKİMOĞLU G., Demirel G., SARI A.  
HOLZFORSCHUNG, vol.76, no.8, pp.744-753, 2022 (SCI-Expanded)
- XXXIX. **The effect of limestone and bottom ash sand with recycled fine aggregate in foam concrete**  
Gencil O., Balci B., Bayraktar O. Y., Nodehi M., SARI A., KAPLAN G., Hekimog G., Gholampour A., Benli A., Ozbakkaloglu T.  
JOURNAL OF BUILDING ENGINEERING, vol.54, 2022 (SCI-Expanded)
- XL. **Thermal energy storage properties, thermal conductivity, chemical/and thermal reliability of three different organic phase change materials doped with hexagonal boron nitride**  
Ouikhalfan M., SARI A., HEKİMOĞLU G., Gencil O., Tyagi V. V.  
SURFACES AND INTERFACES, vol.32, 2022 (SCI-Expanded)
- XLI. **Activated carbon nanotube/polyacrylic acid/stearyl alcohol nanocomposites as thermal energy storage effective shape-stabilized phase change materials**  
Goksu H., Aydinli E., HEKİMOĞLU G., SARI A., Gencil O., Subasi S., Tozluoglu A.  
SURFACES AND INTERFACES, vol.31, 2022 (SCI-Expanded)
- XLII. **Glass fiber reinforced gypsum composites with microencapsulated PCM as novel building thermal energy storage material**  
Gencil O., HEKİMOĞLU G., SARI A., Ustaoglu A., Subasi S., Marasli M., Erdogmus E., Memon S. A.  
CONSTRUCTION AND BUILDING MATERIALS, vol.340, 2022 (SCI-Expanded)
- XLIII. **Foam Concrete Produced with Recycled Concrete Powder and Phase Change Materials**  
Gencil O., Nodehi M., HEKİMOĞLU G., Ustaoglu A., SARI A., KAPLAN G., Bayraktar O. Y., Sutcu M., Ozbakkaloglu T.  
SUSTAINABILITY, vol.14, no.12, 2022 (SCI-Expanded)
- XLIV. **Capric-stearic acid mixture impregnated carbonized waste sugar beet pulp as leak-resistive composite phase change material with effective thermal conductivity and thermal energy storage performance**  
SARI A., HEKİMOĞLU G., Karabayir Y., Sharma R. K., ARSLANOĞLU H., Gencil O., Tyagi V. V.  
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- XLV. **Bio-Based Phase Change Materials for Wooden Building Applications**  
Palanti S., Temiz A., Köse Demirel G., Hekimoğlu G., Sarı A., Jebrane M., Schnabel T., Terziev N.  
FORESTS, vol.13, no.4, pp.1-8, 2022 (SCI-Expanded)
- XLVI. **Investigation of physico-mechanical, thermal properties and solar thermoregulation performance of shape-stable attapulgitite based composite phase change material in foam concrete**  
Gencil O., Ustaoglu A., Benli A., HEKİMOĞLU G., SARI A., Erdogmus E., Sutcu M., KAPLAN G., Bayraktar O. Y.  
SOLAR ENERGY, vol.236, pp.51-62, 2022 (SCI-Expanded)
- XLVII. **Utilization of waste apricot kernel shell derived-activated carbon as carrier framework for effective shape-stabilization and thermal conductivity enhancement of organic phase change materials used for thermal energy storage**  
HEKİMOĞLU G., SARI A., ÖNAL Y., Gencil O., Tyagi V., Aslan E.  
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- XLVIII. **CuO Nanoparticle@Polystyrene Hierarchical Porous Foam for the Effective Encapsulation of Octadecanol as a Phase Changing Thermal Energy Storage Material**  
Doguscu D. K., HEKİMOĞLU G., Sar A.  
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- XLIX. **Metal Oxide Nanoparticle Dispersed-Polyethylene Glycol: Thermal Conductivity and Thermal Energy Storage Properties**  
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ENERGY & FUELS, vol.36, no.5, pp.2821-2832, 2022 (SCI-Expanded)
- L. **Cement based-thermal energy storage mortar including blast furnace slag/capric acid shape-stabilized phase change material: Physical, mechanical, thermal properties and solar thermoregulation performance**

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ENERGY AND BUILDINGS, vol.258, 2022 (SCI-Expanded)

- L.I. **Thermal conductivity enhancement of silica fume based composite thermal energy storage material using different carbon nanomaterials**  
HEKİMOĞLU G., SARI A., Gencil O., Tyagi V. V.  
Energy and Buildings, vol.257, 2022 (SCI-Expanded)
- L.II. **Production and characterization of natural clay-free green building brick materials using water treatment sludge and oak wood ash**  
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ARCHIVES OF CIVIL AND MECHANICAL ENGINEERING, vol.22, no.2, 2022 (SCI-Expanded)
- L.III. **Shape stabilized attapulgite/myristic-palmitic acid composite PCM for thermal energy storage implementations in buildings**  
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- L.IV. **A review on phase change materials (PCMs) for thermal energy storage implementations**  
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MATERIALS TODAY : PROCEEDINGS, vol.58, pp.8, 2022 (SCI-Expanded)
- L.V. **A novel energy-effective and carbon-emission reducing mortars with bottom ash and phase change material: Physico-mechanical and thermal energy storage characteristics**  
Gencil O., HEKİMOĞLU G., SARI A., Sutcu M., Er Y., Ustaoglu A.  
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- L.VI. **Porous biochar/heptadecane composite phase change material with leak-proof, high thermal energy storage capacity and enhanced thermal**  
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- L.VII. **Eco-friendly building materials containing micronized expanded vermiculite and phase change material for solar based thermo-regulation applications**  
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- L.VIII. **High internal phase emulsion templated-polystyrene/carbon nano fiber/hexadecanol composites phase change materials for thermal management applications**  
Doguscu D. K., HEKİMOĞLU G., SARI A.  
JOURNAL OF ENERGY STORAGE, vol.39, 2021 (SCI-Expanded)
- L.IX. **Carbonized waste hazelnut wood-based shape-stable composite phase change materials for thermal management implementations**  
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- L.X. **Microencapsulated heptadecane with calcium carbonate as thermal conductivity-enhanced phase change material for thermal energy storage**  
SARI A., Saleh T. A., HEKİMOĞLU G., Tyagi V. V., Sharma R. K.  
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- L.XI. **Silica fume/capric acid-stearic acid PCM included-cementitious composite for thermal controlling of buildings: Thermal energy storage and mechanical properties**  
HEKİMOĞLU G., NAS M., Ouikhalfan M., SARI A., Tyagi V., Sharma R., KURBETÇİ Ş., Saleh T. A.  
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- L.XII. **Walnut shell derived bio-carbon/methyl palmitate as novel composite phase change material with enhanced thermal energy storage properties**  
HEKİMOĞLU G., SARI A., Kar T., KELEŞ S., KAYGUSUZ K., Tyagi V., Sharma R., Al-Ahmed A., Al-Sulaiman F. A., Saleh T. A.  
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- L.XIII. **Thermal management performance and mechanical properties of a novel cementitious composite**

- containing fly ash/lauric acid-myristic acid as form-stable phase change material**  
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- LXIV. **Fly Ash/Octadecane Shape-Stabilized Composite PCMs Doped with Carbon-Based Nanoadditives for Thermal Regulation Applications**  
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- LXV. **Phase change material impregnated wood for passive thermal management of timber buildings**  
TEMİZ A., HEKİMOĞLU G., KÖSE DEMİREL G., SARI A., Mohamad Amini M. H.  
INTERNATIONAL JOURNAL OF ENERGY RESEARCH, vol.44, no.13, pp.10495-10505, 2020 (SCI-Expanded)
- LXVI. **Thermal energy storage and thermal conductivity properties of fatty acid/fatty acid-grafted-CNTs and fatty acid/CNTs as novel composite phase change materials**  
Al-Ahmed A., Sari A., Mazumder M. A. J., Salhi B., Hekimoglu G., Al-Sulaiman F. A., Inamuddin I.  
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- LXVII. **Evaluation of pumice for development of low-cost and energy-efficient composite phase change materials and lab-scale thermoregulation performances of its cementitious plasters**  
SARI A., HEKİMOĞLU G., Tyagi V., Sharma R.  
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- LXVIII. **Effects of Thermal Cycling Operation on Solar Thermal Energy Storage, Morphology, Chemical/Crystalline Structure, and Thermal Degradation Properties of Some Fatty Alcohols as Organic PCMs**  
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ENERGY & FUELS, vol.34, no.7, pp.9011-9019, 2020 (SCI-Expanded)
- LXIX. **Thermal energy storage and thermal conductivity properties of Octadecanol-MWCNT composite PCMs as promising organic heat storage materials**  
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SCIENTIFIC REPORTS, vol.10, no.1, 2020 (SCI-Expanded)
- LXX. **Form-Stabilized Polyethylene Glycol/Palygorskite Composite Phase Change Material: Thermal Energy Storage Properties, Cycling Stability, and Thermal Durability**  
SARI A., Ouikhalfan M., Chehouani H., HEKİMOĞLU G., BİÇER A., Al-Ahmed A., Al-Sulaiman F. A., Tyagi V. V.  
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- LXXI. **Low cost and eco-friendly wood fiber-based composite phase change material: Development, characterization and lab-scale thermoregulation performance for thermal energy storage**  
SARI A., HEKİMOĞLU G., Tyagi V. V.  
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- LXXII. **Evaluation of carbonized waste tire for development of novel shape stabilized composite phase change material for thermal energy storage**  
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WASTE MANAGEMENT, vol.103, pp.352-360, 2020 (SCI-Expanded)
- LXXIII. **Investigation of thermal properties and enhanced energy storage/release performance of silica fume/myristic acid composite doped with carbon nanotubes**  
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