

New materials for microwave cookware that heats faster with less energy

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Researchers are reporting new ceramics, such as the rice cooker above, that heat faster and stay hot longer than conventional microwave cookware. Credit: Sridhar Komarneni

You may soon be enjoying microwave popcorn and other 'nuked' foods and beverages faster than ever before, while saving on electricity. Researchers in Pennsylvania and Japan report development of new ceramic materials that heat up faster and retain heat longer than conventional microwave cookware while using less energy. Their report is scheduled for the August 26 issue of ACS' *Chemistry of Materials*.

In the new study, Sridhar Komarneni, Hiroaki Katsuki, and Nobuaki Kamochi note that researchers long have sought a commercially feasible

method for using microwaves in the production of new genres of sturdy-heat-resistant ceramic materials. However, no optimal process had been developed.

The scientists describe preparation of ceramic plates from mixtures of magnetite and petalite, two naturally occurring minerals. Those new composite plates heated faster and retained heat for longer periods than commercially available microwave cookware, researchers say.

The materials also show promise as an energy-saving component in microwave-based systems for cleaning up organic toxic waste in the environment.

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