

Abstract Submitted  
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**New Possible Application Area for Magnetocaloric Materials:  
Hyperthermia Method** EKIN SECILMIS<sup>1</sup>, Brown University, ALI OSMAN  
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conventional Hyperthermia Method used for cancer treatment today heats the whole  
body or specific parts of it. This way of implementing the Hyperthermia Method  
presents hazards, like destroying healthy cells. Our work presents a new approach  
for the Hyperthermia method, making use of the magnetocaloric effect to overcome  
the problems related to the heating of the actual bodily tissue. In order to bring  
practical use of this new approach, the relevant characteristics of magnetocaloric  
materials for the Hyperthermia method have been determined. These characteris-  
tics are the magnetic entropy change, the adiabatic temperature change, the Curie  
temperature, and the Full Width at Half Maximum. Some example materials com-  
plying with the required characteristics are obtained from the literature, and listed  
in our paper. That said, there are additional parameters that are helpful in deter-  
mining the most appropriate material. We are also reporting possible ways to obtain  
new magnetocaloric materials for use in the Hyperthermia method.

<sup>1</sup>Investigation, Formal analysis, Validation

<sup>2</sup>Conceptualization, Validation, Writing - Original Draft, Supervision

<sup>3</sup>Methodology, Reviewing and Editing

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