

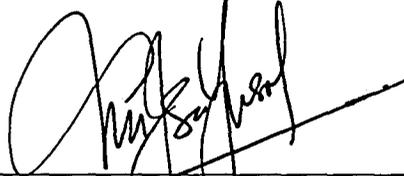
**THE EFFECT OF SINTERING PROCESS ON I-V PROPERTIES OF
RE123 CERAMIC UTILIZING
HOT SPOT**

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**Final Year Project Report Submitted in
Partial Fulfillment of the Requirement for the
Degree of Bachelor (Hons.) Physics
In Faculty of Applied Sciences
Universiti Teknologi MARA**

MAY 2008

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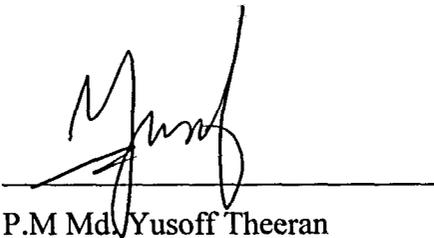
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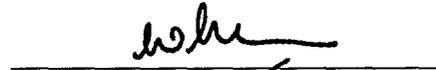
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ACKNOWLEDGEMENT

BISMILLAHIRRAHMANIRRAHIM. In the name of ALLAH, The Most Gracious, The Ever Merciful. It is with the deepest sense of gratitude to The Almighty ALLAH who gives me strength and ability to complete this project and thesis as it is today.

First of all, my deepest appreciation goes to my beloved parent, sisters and brothers, for their loves, understanding and encouragement. I dedicate this piece of work to all of them.

My honest gratitude and a big thank you goes to my project supervisor Tuan Haji Mohd Isa Mohd Yusof who had taught me a lot about this project. Thank you for your guidance, advice and patience in helping me complete this project. Thanks a million and only God can repay your kindness.

Last but not least, to my dearest, honest and loving friends, thanks for the friendship and every single opinions and suggestions in completing this project. Finally, to all who were involved directly or indirectly with this project, a thousand thanks and I owe it all from you.

Thank you.

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ABSTRACT

THE EFFECT OF SINTERING PROCESS ON I-V PROPERTIES OF RE 123 CERAMIC UTILIZING HOT SPOT

A hot spot which is a local area glowing orange appear in $\text{HoBa}_2\text{Cu}_3\text{O}_{7-\delta}$ ceramics when a certain voltage is applied to the rod at room temperature. In this experiment the $\text{HoBa}_2\text{Cu}_3\text{O}_{7-\delta}$ ceramics samples were prepared using conventional solid state method. The experiment was done using three different samples which each sample was sintered at different sintering temperature. The first sample was sintered at 910 °C for 24 hours whereas the second and third samples were heated up until 970 °C and 980 °C respectively before they were be sintered at 910 °C for 24 hours. All samples were tested for its current voltage characteristics using the four point probe method. The current through the rod decreased abruptly when the hot spot appeared with increasing voltage. From this experiment, it can be observed that when the oxygen content increased, the resistivity will decrease. The voltages of the hot spot appearance were determined. The result showed the different current voltage characteristics for all three samples which is sintered at different sintering temperature. By increasing the sintering temperature it will also increase the resistivity of the sample.