INVESTIGATION OF TEMPERATURE PROFILES OF TRADITIONAL PUTA AND PREPARATION OF CHALCOPYRITE ASH FOR AYURVEDIC TREATMENT USING MUFFLE FURNACE

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Degree of Master of Science

Department of Chemical & Process Engineering

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DECLARATION

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief, it does not contain any material previously published or written by another person except where due reference is made in the text.

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Dr.(Mrs.) S.H.P.Gunawardena		Dr.(Mrs.) S.K.M.K.Herapathdeniya	
Signature	: ..…….	Signature	: ……..
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Abstract

Bhasmas (ashes) are complex compound forms of metals, minerals or gemstones obtained after a series of ayurvedic pharmaceutical preparation processes; purification (*shodhana*), trituration (*bhavana*) and incineration (*marana*) in combination with various herbal extracts and other substances. These three processes play an important role in preparation of ashes. *Puta* is the specific quantum of heat required to get the desired quality ashes in the process of incineration (*marana*) and naturally available fuels like cow dung cakes are used to produce heat in the conventional *puta*. The amount of heat required to produce a specific ash is substance specific and described in terms of fuel burnt. The objectives of this research are to establish temperature profiles for *Maha Puta, Gaja Puta* and *Varaha Puta* and to verify temperature profile of *Varaha puta* using a muffle furnace. Temperature profiles were established using dried cow dung cakes with an average calorific value of 15.44 MJ/kg as the fuel and the maximum temperatures achieved for *Maha Puta, Gaja Puta* and *Varaha Puta* were 1380 ^{0}C, 1060 ^{0}C and 850 ^{0}C respectively. Then temperature profile of traditional *Varaha Puta* was matched with a muffle furnace and Chalcopyrite ash (*Swarna Makshika bhasma*) was prepared using both traditional method and electric muffle furnace. The ashes produced using both methods showed similar properties and hence the temperature profile obtained for traditional *Varaha Puta* using the muffle furnace was verified.

Key words : *Puta*, ash (*bhasma*), Chalcopyrite

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