

UNIVERSITI TEKNOLOGI MARA

**GEOMETRY MOTIFS AND
SYMMETRY CHARACTERISTICS
ON MALAY SONGKET**

VOL. I

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ABSTRACT

Songket is an aesthetics fabric which is showed from the complexity of songket patterns which encourage the Malay weavers to be more patient, diligent, and creative in ideas and furthermore, becoming excellent in mathematics. Songket and mathematics cannot be separated as it is needed in all the processes as to produce the beautiful results of songket patterns. This research is about the analysis of Malaysian songket motifs through the technique of transformation or symmetry operation group patterns with the combination of mathematical concepts which are two-dimensional plane method which are the frieze patterns groups and wallpaper patterns groups and also from visual art concept through structural designs technique. This research is also based on the classification of Malaysian songket patterns which are from four main structure of songket which are *badan kain*, *kepalakain* and *pengapitkain*, *kaki kain* and *tepi kain* of sarong and *kainlepas / selendang* (shawl), where these are based on their geometric symmetries on the plane. This research seeks to identify early Malay songket textiles within the context of mathematical pattern groups and visual arts concepts (structural designs) in the twentieth century, which may have been influenced or been influenced by, technical development in the production of pattern-woven textiles from Islamic world. It constitutes an extremely valuable tool for this research because it enables researcher to identify the characterization of songket patterns triggered from transformations, frieze patterns, wallpaper patterns and structural designs. The significance of this research is to be documented and catalogued as useful guidelines for related professions and as database for future references. It is also to serve as evidence of the existence of geometric and symmetry patterns on Malaysian songket patterns as a useful contribution to the songket design industry and finally as examples for other Malaysian arts or crafts in having design ideas in an effective way.

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