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器件制备技术及器件物理

电子纸微杯结构金属模具的设计与制作

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摘要：提出了用于电子纸的微结构金属模具的“选择生长”方法,即通过在金属基材上形成选择性的导电与不导电图形,来制作深纹的“微杯”金属模具。在金属基材上涂布负性光刻材料、用带有空间光调制器的激光直写系统曝光形成“微杯”图形,然后通过电铸工艺制作出镍金属模具。实际制作的“蜂窝”分布的微杯结构参数与设计参数基本吻合。该工艺流程适合研制更大尺寸的电子纸的微杯模具,将为“微杯”模具制作提供一种有效手段。

关键词：电子纸 微杯模具 光刻电铸

Design and Fabrication of Metal Microcup Mould for E-Paper

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Abstract: A 'selective grow' method for fabricating E-paper metal mould was approached. The microcup pattern with insulating material was made on metal substrate and the mould was obtained with follow-up process. First, Negative photo resists was coated on the metal substrate and the microcup pattern was exposed by a SLM LDW system. Second, after developing process, the metal mould was made by electroforming. The experiment results are according to the input parameters. This method is suit for larger format process, it will be an effective method for microcup mould.

Keywords: E-paper microcup mould LIGA

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