

國立台灣大學技術行銷表

台大案號: 06A-101104

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產品/技術名稱	六氯環三磷腈-聚醚胺奈米矽片難燃劑製程簡便化開發
發明人/單位	林江珍教授/台灣大學 高分子科學與工程學研究所
產品/技術說明	本發明直接將高濃度之磷腈與聚醚胺進行反應，控制製程反應條件有效的避免交聯反應生成；待反應完成後無須移除溶劑便可簡單地與奈米矽片溶液摻混，形成含磷之奈米複合材料難燃劑。由於合成出產物具有特殊溫感性質，可藉由溫度改變有效將產物(HCP-D400/NSP)與溶劑分離，可解決以往含磷之奈米複合材料難燃劑製程繁複、加工複雜等問題，深具實用價值。
應用範圍	應用包括電子零組件材料如印刷電路版、半導體封裝材，塗料，或其他功能性耐燃產品上。
產品/技術優勢	製程簡易、原料可直接進料而無交聯反應，並有效利用材料溫感特性將產物與溶劑分離。
市場潛力	新型環保難燃性材料對於未來電子產品扮演相重要角色，可應用在目前許多國內半導體、封裝廠等電子大廠，但現行製程步驟繁複，預估此操作程序之簡化更能符合工業化的需求。
產品/技術 智財權保護方式	專利申請中

Marketing Abstract of NTU's Invention Disclosure

NTU's docket no: _____ (由技轉室填寫)

TTO contact :

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Title	Convenient and Simple Process for Phosphazene-Jeffamine Amines/NSP
Inventor (s)	Prof. Jiang-Jen-Lin/ Institute of Polymer Science and Engineering, National Taiwan University
Brief Description	This invention relates to process simplify of the synthesis of branch-type poly(oxyalkylene)-amines from hexachlorocyclotriphosphazene (HCP) and poly(oxypropylene)-amines (POP-amines) to form HCP-amines, and further mixed with Nano Silicate Platelet (NSP) directly, which can also be used as nanocomposite flame retardants and curing agents for epoxy resin. This simple HCP-amine procedure could directly use highly concentration HCP which react with POP-amines without crosslinking. After we synthesized HCP-amines, it could mix with NSP solution directly instead of needing further purification, which is easy and simple.
Fields of Application	Coatings of flame retarding, materials for sealing electronic devices, and semi-conductors.
Advantages	It is very convenient to take advantage of HCP-D400/NSP from separated from solvents, which due to its LCST characteristic. The procedure of making HCP-D400/NSP flame retardant in this invention is coherent and easy to operate and also suitable for manufacturing.
Market Potential	Materials with high degradation temperature are important in the sealing of electronic devices. Therefore, flame retardants from easy and simple manufacturing process is urgent.
IP Right(s)	