NAMI WEBINAR 網絡研討會

Advanced Materials for 5G Era
應用於5G時代的先進材料

22 Jan 2021 | **1500 – 1630** | **Cantonese/Putonghua 廣東話/普通話**

5G is the next revolution enhancing network connectivity and unlocking a broad range of opportunities. It carries massive expectations to bring the ADAS (Advanced Driver-assistance Systems), VR (Virtual Reality) and IoT (Internet of Things) from fiction to reality. To meet the requirement of higher driving power and address the significant signal transmission loss of the high frequency band of 5G, more efficient thermal management materials, low-loss signal transmission materials and packaging materials have to be developed.

In this webinar, NAMI will share its latest development in material research for 5G application, including anisotropic thermal management materials, highly thermal conductive nano-silver materials for power electronics packaging, and new generation 5G low loss materials.

5G是下一代最具變革性的技術，能進一步提升網絡連接並釋放廣泛機會。通過5G技術，ADAS（先進輔助駕駛系統）、VR（虛擬實境），以及IoT（物聯網），從虛構逐步走進現實。為了滿足更高驅動功率和解決5G高頻波段遇到的信號傳輸損耗的問題，需要開發更有效的熱管理、低信號傳輸損耗和封裝材料。

我們將在是次研討會和大家分享NAMI在5G電子材料方面的最新研究進展，包括具有取向結構的各向異性高導熱材料、用於高功率電子器件封裝的超高導熱納米銀材料，以及新一代應用於5G的低損耗材料。

Next Generation 5G Low Loss Materials
用於5G的下一代低損耗材料
Dr. Eric Kwok 郭志豪博士
Technical Manager 技術經理 NAMI

Nano-silver: Scale-up Synthesis and Their Applications in Power Electronics
納米銀：量產合成及其在功率電子中的應用
Ms. Becky Wang 王悦辰小姐
Senior Engineer 高級工程師 NAMI

Anisotropic Thermal Management Materials
各向異性熱管理材料
Dr. Cathy Chen 陳曉華博士
Senior Engineer 高級工程師 NAMI

Immersion Coolant for Thermal Management
用於熱管理的浸入式冷卻液
Dr. Hinci Wong 黃志軒博士
Senior Engineer 高級工程師 NAMI

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Next Generation 5G Low Loss Materials
用於5G的下一代低損耗材料

Dr. Eric Kwok 郭志豪博士
Technical Manager 技術經理
NAMI

Signal transmission loss and signal latency are significant in 5G mmWave high frequency band. These are because the existing material has high dielectric constant and dielectric loss tangent. We shall focus on the material low loss area, from the substrate of mmWave antenna module to the material inside packages for antennas in package (AiP).

在5G mmWave高頻帶中，信號傳輸損耗和信號延時將變得非常關鍵。而損耗和延遲是由高介電常數和介電損耗角正切材料所引起。NAMI將在低損耗材料技術領域分享從mmWave天線模塊的基板到封裝內天線(AiP)的材料。

Nano-silver: Scale-up Synthesis and Their Applications in Power Electronics
納米銀：量產合成及其在功率電子中的應用

Ms. Becky Wang 王悦辰小姐
Senior Engineer 高級工程師
NAMI

Power electronics requires new packaging material that can dissipate heat faster and withstand extreme temperature conditions with good reliability. Die attach material based on nano silver has been developed through a scalable nanoparticle synthesis process and optimization of material paste formulation. Excellent thermal conductivity (~100-200W/mK) and high shear strength can be achieved after sintering to meet the requirement of power electronics packaging.

功率電子需要可靠性高的封裝材料，以更快地散熱，並承受極端溫度條件。我們將介紹基於可量產的納米粒子合成工藝和材料配方優化基礎上開發的納米銀固晶材料。燒結後的納米銀材料具有優良的導熱性（~100-200W/mK）和高剪切強度，能滿足功率電子的封裝要求。

Anisotropic Thermal Management Materials
各向異性熱管理材料

Dr. Cathy Chen 陳曉華博士
Senior Engineer 高級工程師
NAMI

Designed for superior heat dissipation, NAMI's 5G anisotropic thermal management material is a new class of material that provides a boost in thermal conductivity over the current leading products in the market. NAMI has developed a series of material alignment techniques which allow the functional materials to align, direct and organize in a specific orientation, providing an efficient heat transfer pathway with a balance of material flexibility, electrical and mechanical performances, etc.

NAMI的各向異性導熱材料是為實現出色的器件散熱而設的新型5G熱管理材料，其導熱係數較目前市場上的產品大幅提升。NAMI開發了一系列材料排佈技術，使功能材料可按特定方向排列、定向和組織，提供更有效的傳熱路徑，同時兼顧產品的柔韌性、電氣和機械性能。

Immersion Coolant for Thermal Management
用於熱管理的浸入式冷卻液

Dr. Hinci Wong 黃志軒博士
Senior Engineer 高級工程師
NAMI

Immersion cooling is a revolutionized thermal management solution that can greatly improve power usage efficiency in data center. NAMI is developing a series of dielectric immersion coolants with high thermal conductivity, high specific heat capacity and good dielectric properties for single and two-phase immersion cooling that will improve heat dissipation efficiency over conventional cooling system.

浸入式冷卻是一種革新的熱管理方案，能大大提高數據中心的電源使用效率。NAMI正在開發一系列具有高熱傳導率、高比熱容量和良好介電性能的浸入式冷卻液，可用於單相和兩相浸入式冷卻，並達到比傳統冷卻系統更好的散熱效率。