



Technology for Thermoset Plastics Recycling and Sustainable Plastic Products Development

Witii Technology Limited
Nano and Advanced Materials Institute Limited



Outline



1. Story sharing: From EMC Wastes to Green Pallets by Witii Technology Limited
2. NAMI Plastic Recycling Technologies and their Sustainable Products by NAMI



Witii Technology Limited



- Witii Technology Limited (Witii), a start up company focus on environmental friendly pallet business
- Epoxy moulding compound (EMC) is a common thermoset waste from IC industry
- Witii aims to offer a “zero-waste” product life cycle: Recycle EMC materials, mix with PE packaging materials and fabricate pallets



**EMC wastes from
IC industry**

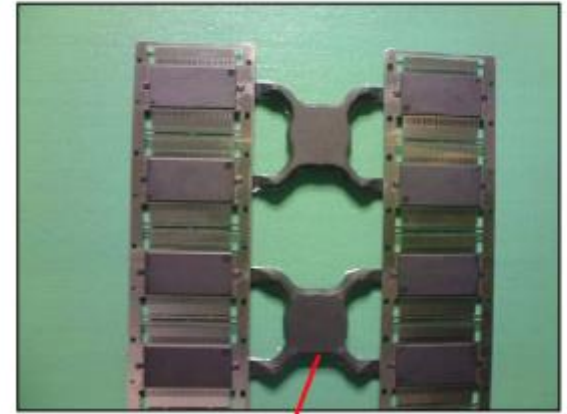
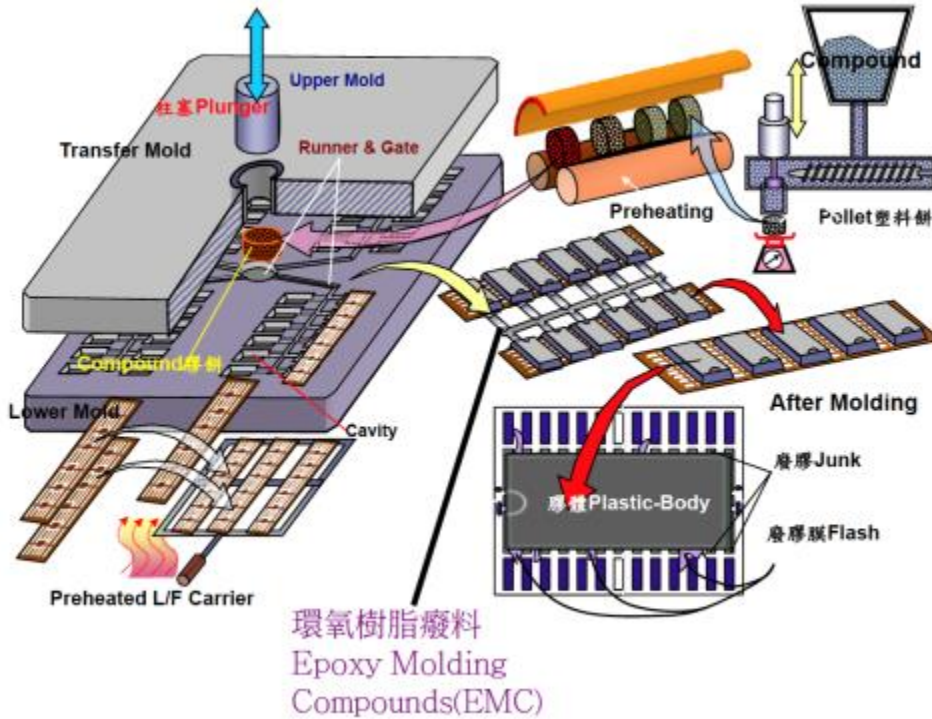
*Can EMC waste
change
into pallet??*



**Environmental friendly
pallet**



Issue of EMC Wastes



環氧樹脂廢料
Epoxy Molding
Compounds(EMC)



EMC is used in all Integrated Circuits to encapsulate microelectronic devices and half of the production is **discarded to waste** in the process



Issue of EMC Wastes



EMC have not been treated as a recyclable material as it is **thermoset** in material nature and therefore its waste has been **landfilled**



Benefits of Turning EMC Wastes to Pallets



Reduced production
cost using recycled
EMC



Circular and Recyclable
Products



Replace Wooden
Pallets is a Global
Trend



Reduction of EMC
Waste and Landfill



Project Incubation Process



**How to recycle
EMC wastes to
environmental
friendly pallets?**



NAMI has
technology recycle
thermoset plastic
EMC waste to pallet,
we can achieve your
requirement with ITC
project with ITC
funding



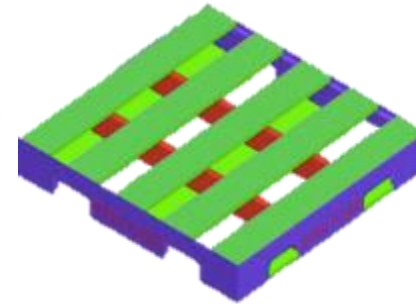
Collaboration with NAMI



EMC waste



Landfill



Green pallets with desirable strength

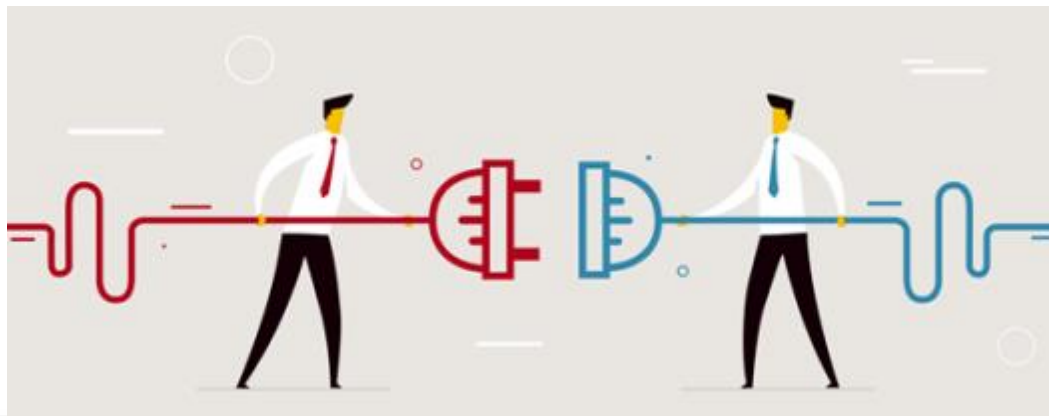
NAMI's supercritical technology can break down the network structure in EMC, modify the waste and fabricate into pallets. The recycling process is environmental-friendly, with **high recycling yield and purity**.



Collaboration with NAMI



- ITF Project
- ITF funding: **70%** of Project Cost plus **40%** Cash Rebate to Witii
- NAMI owned IP and exclusive license to Witii
- Duration: 12 months
- Product: Recyclable pallets with EMC waste
- Time to market: 2018





Final Product



- Totally recycled materials
- Low raw material cost
- Fabricated by extrusion/injection molding
- Recycled EMC content >10wt%
- Meet standards
 - ISO 8611 Pallets for materials handling -Flat Pallets
 - ISO 12777 Methods of test for pallet joints