Prof. Chien-Lung Liang (Inorganic Materials Group) – Microstructures and Metallurgy Lab (MM Lab) –

Current Position:

Assistant Professor in Department of Materials Science and Engineering at National Taiwan University of Science and Technology

Education:

Ph.D. in Department of Materials Science and Engineering at National Cheng Kung University

Expertise and Research Areas:

Novel electro-treatment of metallic materials, Interfacial reaction and surface engineering of materials, Advanced electronic packaging materials and technology development, Electromigration

Courses:

1st semester: Mandatory for undergraduates - *Materials Science (I) (EMI)*
2nd semester: Elective for undergraduates - *Metallic Materials*, Elective for graduates - *Introduction to X-ray Crystallography and Diffraction (EMI)*

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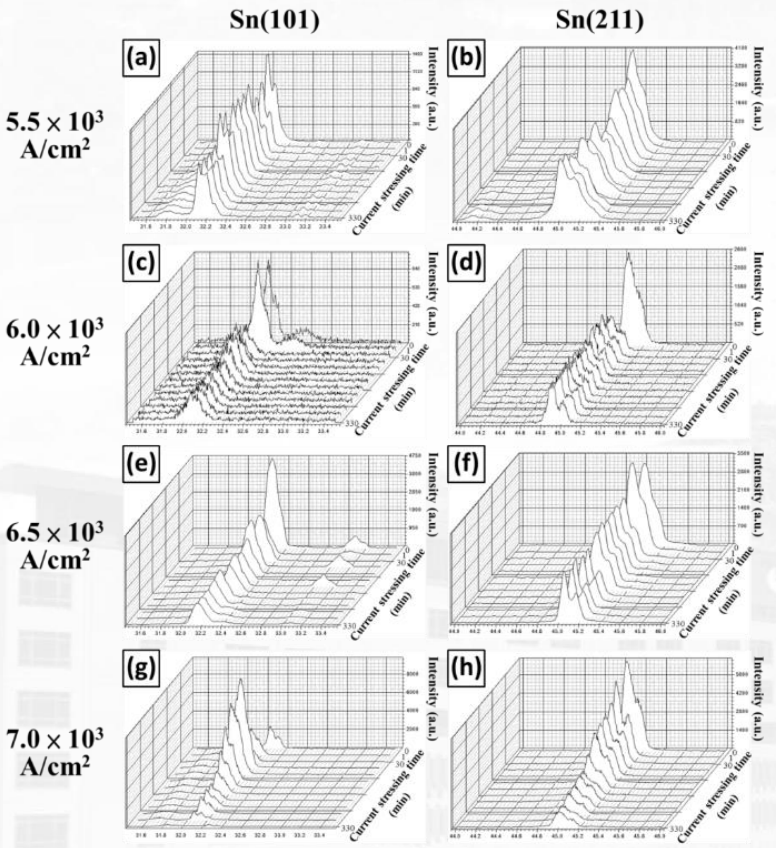
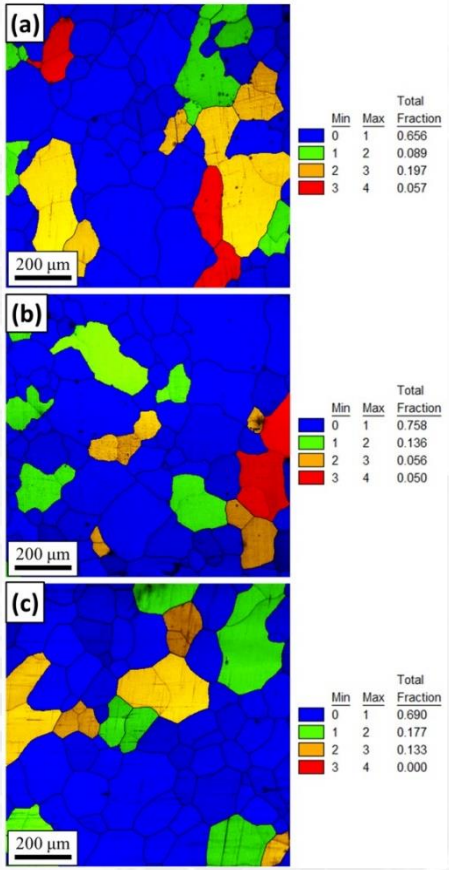
Microstructures and Metallurgy Lab

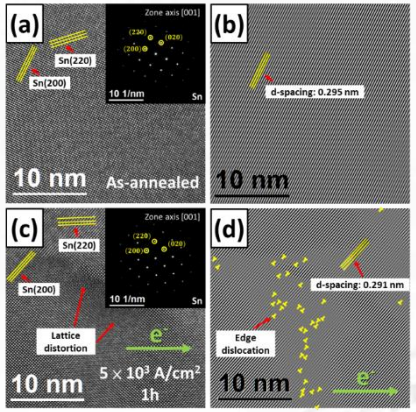
– Novel Electro-treatment of Metallic Materials –



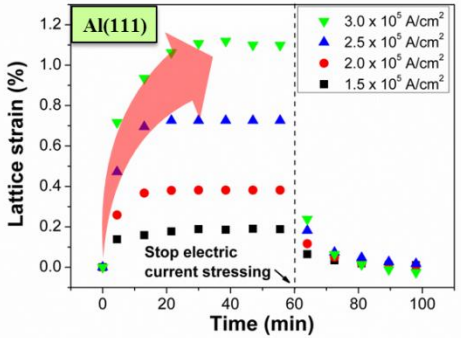
In situ crystallinity decline in pure Sn strips during electro-treatment
(**Acta Mater.** 200 (2020) 200)



In-grain misorientation evolution in pure Al foils during electro-treatment
(**Mater. Charact.** 174 (2021) 110980)



Dislocation generation in pure Sn strips during electro-treatment
(**Mater. Sci. Eng. A** 772 (2020) 138689)



Strain accumulation in pure Al thin films during electro-treatment
(**Thin Solid Films** 636 (2017) 164)

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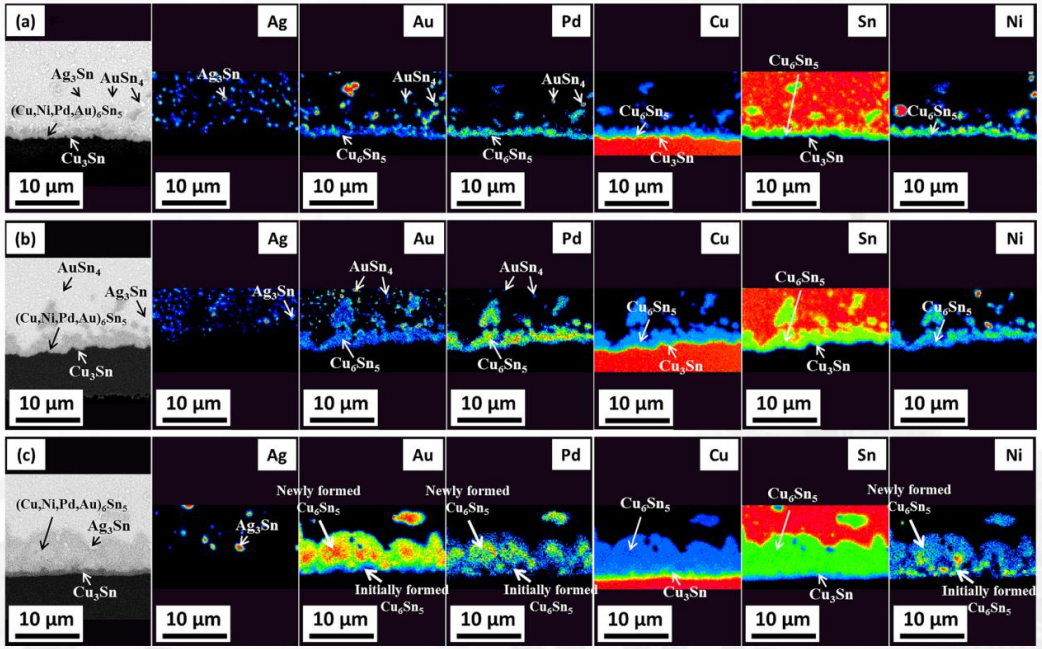
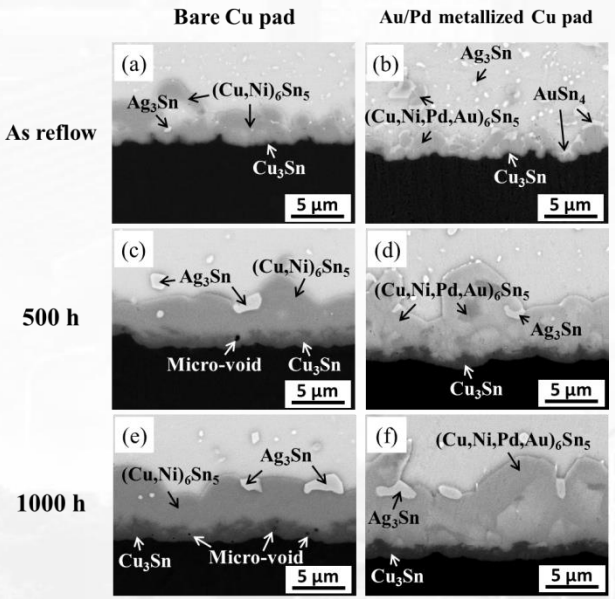
Microstructures and Metallurgy Lab

– Interfacial Reaction and Surface Engineering of Materials –



Elemental mappings at solder/Au/Pd/Cu interfaces after solid-state aging
(**J. Mater. Sci.** 52 (2017) 11659)



Microstructure evolutions at solder/metallization interfaces after solid-state aging
(**Surf. Coat. Technol.** 319 (2017) 55)

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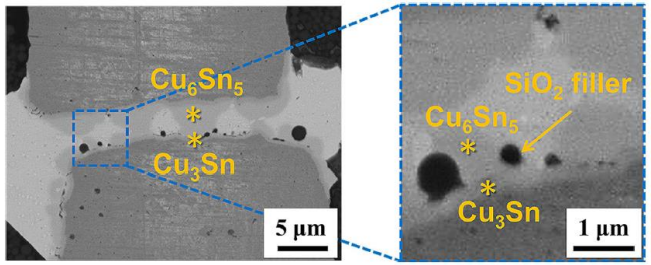
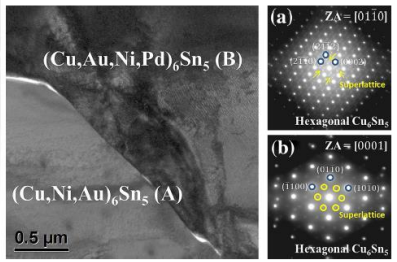
Bonding interfaces and IMCs in novel TCNCP solder joints
(**J. Electron. Mater.** 45 (2016) 51)





Lattice structure characterization of the bilayer Cu_6Sn_5-based IMCs
(**J. Mater. Sci. Mater. Electron.** 29 (2018) 15233)

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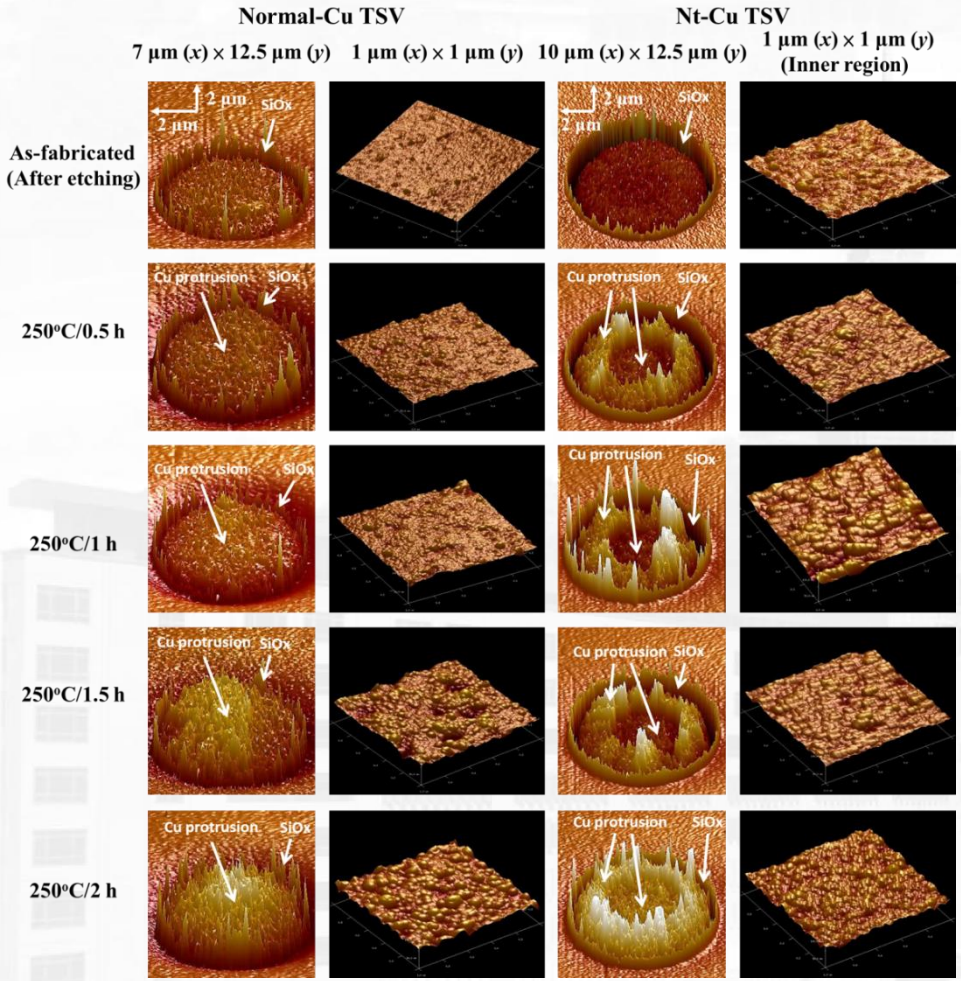
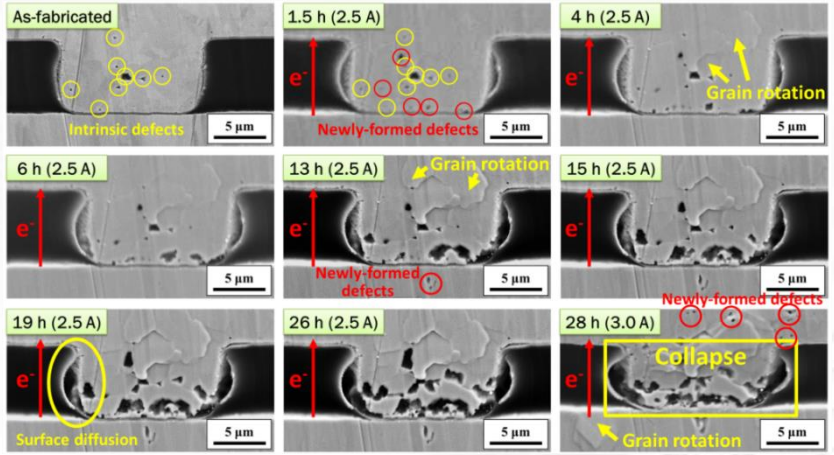
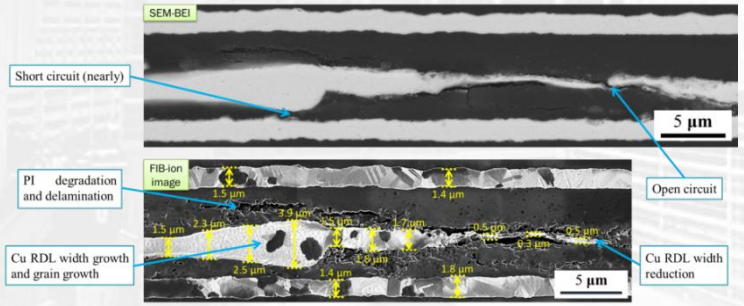
– Advanced Electronic Packaging Materials and Technology Development –



Cu protrusion inhibition in TSVs by nanotwinned-Cu application
(**Scr. Mater.** 197 (2021) 113782)



***In situ* electromigration behavior in novel Cu tall pillar/Cu via interconnects**
(**71st IEEE ECTC**, 2021 June)



Electromigration-induced failure in advanced fine-pitch Cu RDLs for FOCoS packaging
(**Mater. Chem. Phys.** 256 (2020) 123680)

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