

Caption

Figure 1. Schematic illustration of the heated mold continuous casting (HMC) process.

Figure 2. Schematic illustration: (a) furnace cooling in a crucible (FC); (b) gravity casting (GC).

Figure 3. Schematic diagram showing the dimensions of the tensile test specimen.

Figure 4. Optical micrographs and SEM images of FC, GC and HMC samples.

Figure 5. SEM images of FC, GC, and HMC samples with element mappings showing Al, Mg, Si, Mn, and Fe, obtained by energy dispersive X-ray spectroscopy analysis (EDS).

Figure 6. Inverse pole figure (IPF) maps overlaid with image quality (IQ) maps, obtained by EBSD from sample surfaces perpendicular to the casting direction.

Figure 7. Kernel average misorientation (KAM) maps corresponding to the IPF maps in Figure 6 for the FC, GC, and HMC samples.

Figure 8. Vickers hardness data for FC, GC, and HMC samples: (a) Vickers hardness; (b) Vickers hardness versus SDAS.

Figure 9. Representative curves of tensile stress–strain for FC, GC and HMC samples.

Figure 10. Tensile properties of FC, GC and HMC samples: (a) ultimate tensile strength; (b) 0.2% proof stress; (c) strain to failure.

Figure 11. Relationship between tensile properties and SDAS for ADC6 samples: (a) σ_{UTS} vs. SDAS; (b) $\sigma_{0.2}$ vs. SDAS; (c) ϵ_f vs. SDAS.

Figure 12. SEM images of fracture surfaces of the FC, GC, and HMC samples after tensile testing.

Figure 13. Micrographs of cross-sections adjacent to the fracture surfaces of the HMC samples.

Figure 14. SEM images with element mappings on the fracture surfaces of FC, GC and HMC samples after tensile test.

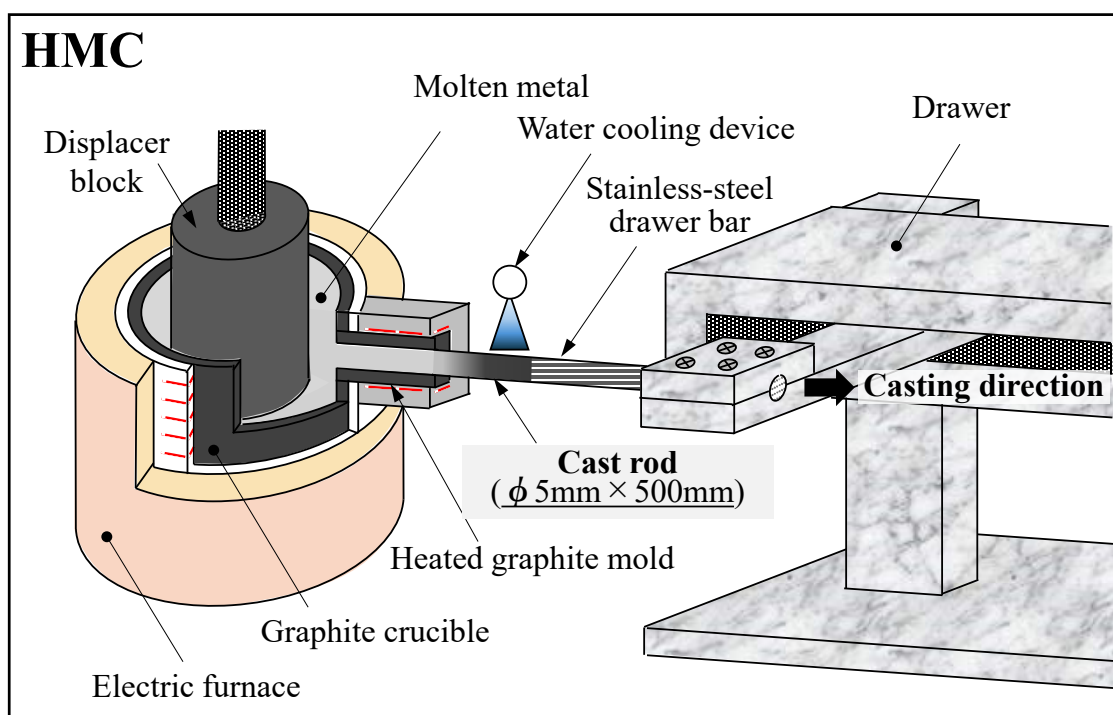


Figure 1. Schematic illustration of the heated mold continuous casting (HMC) process.

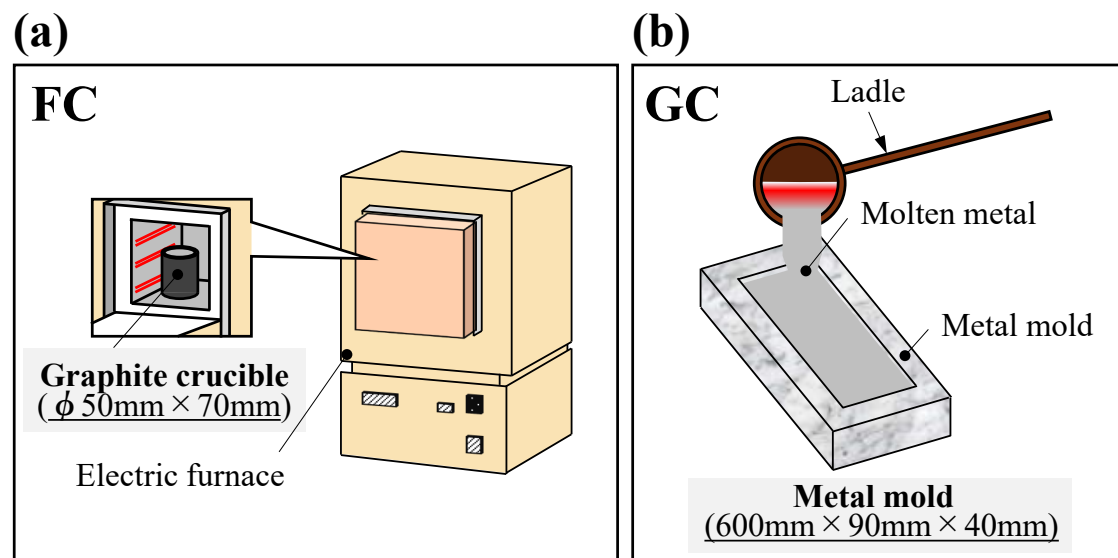


Figure 2. Schematic illustration: (a) furnace cooling in a crucible (FC); (b) gravity casting (GC).

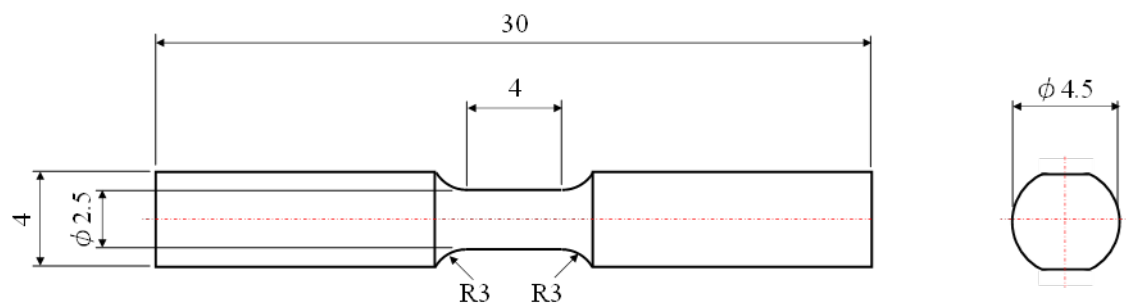


Figure 3. Schematic diagram showing the dimensions of the tensile test specimen.

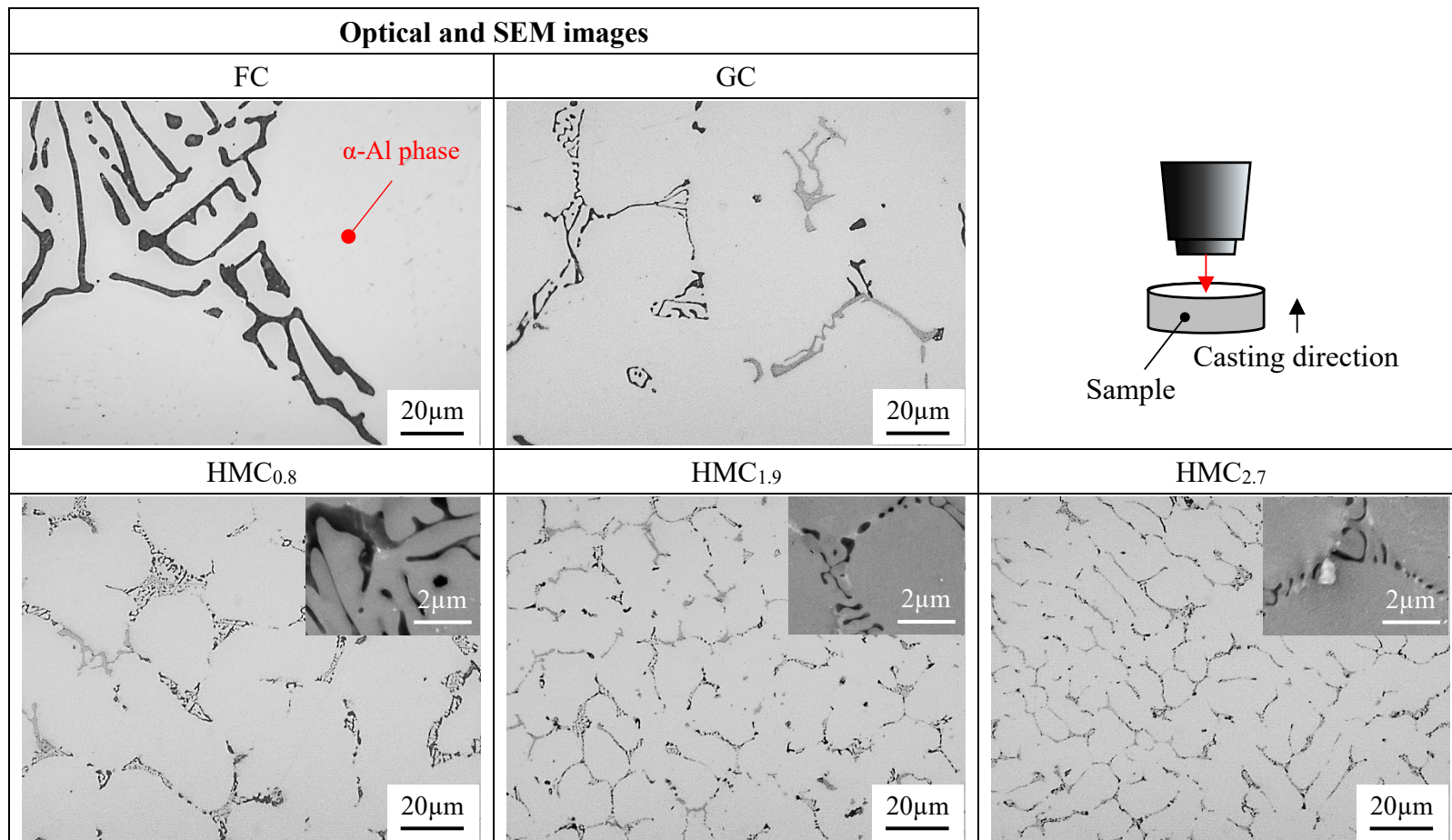


Figure 4. Optical micrographs and SEM images of FC, GC and HMC samples.

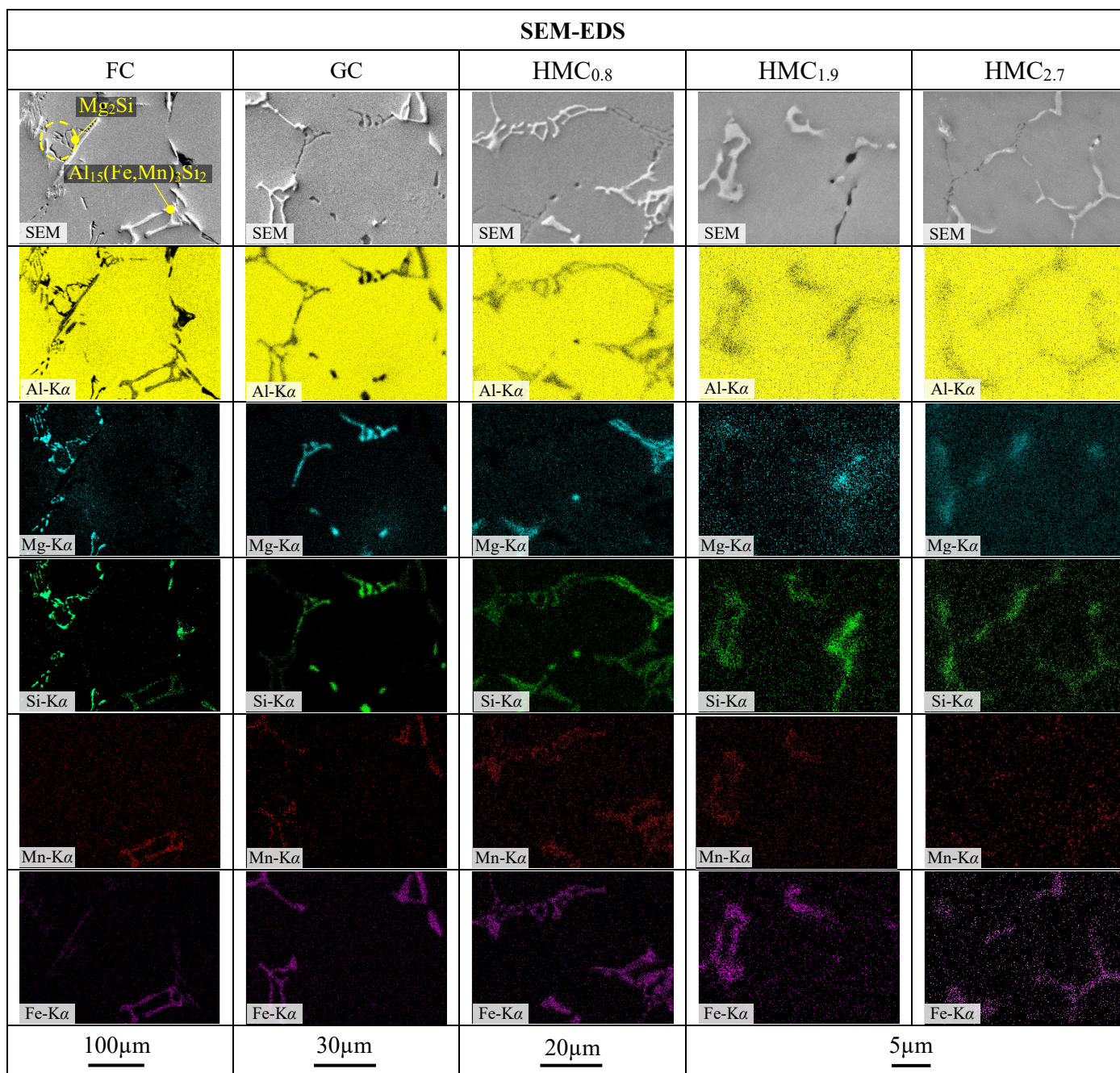


Figure 5. SEM images of FC, GC, and HMC samples with element mappings showing Al, Mg, Si, Mn, and Fe, obtained by energy dispersive X-ray spectroscopy analysis (EDS).

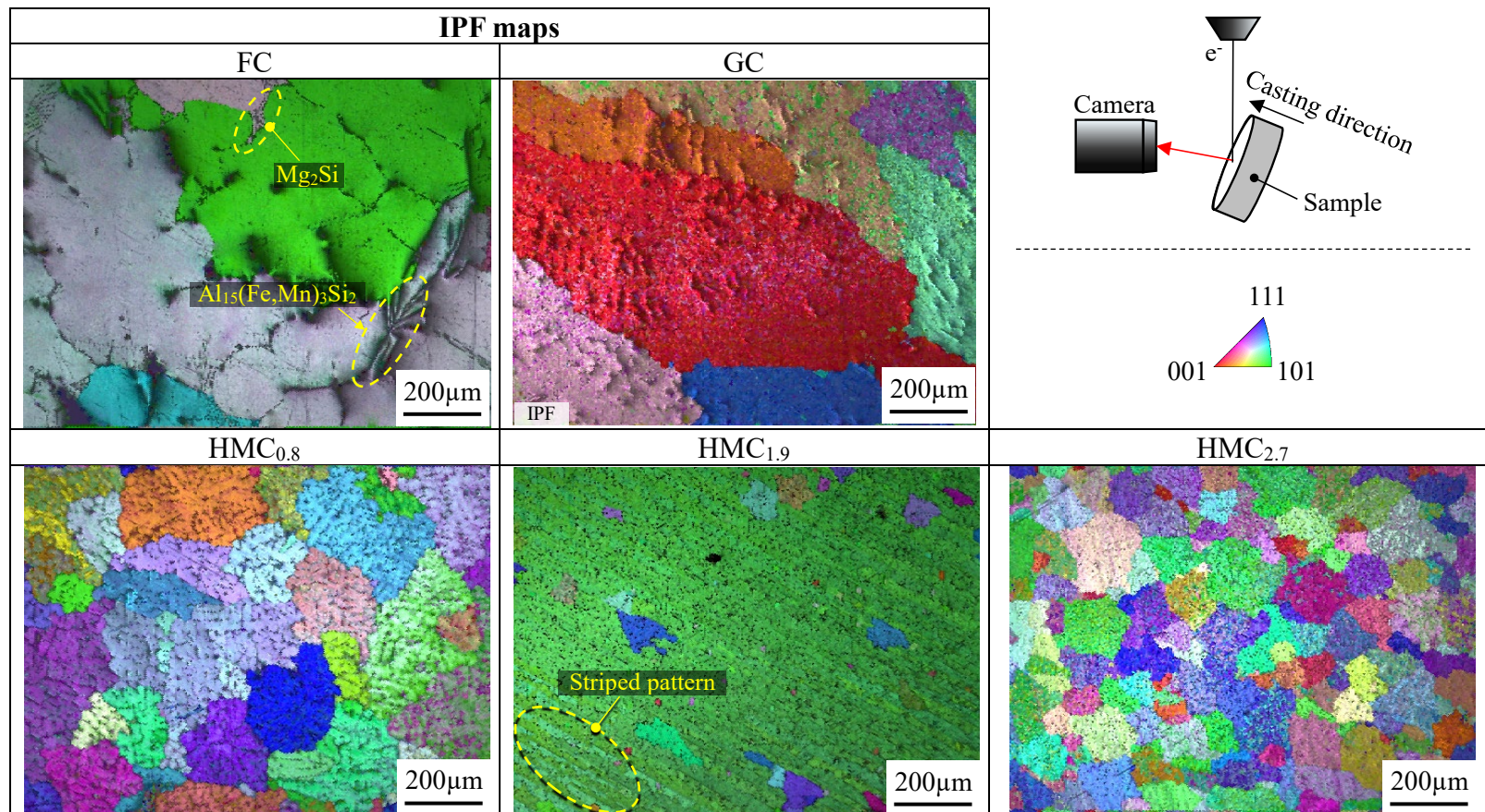


Figure 6. Inverse pole figure (IPF) maps overlaid with image quality (IQ) maps, obtained by EBSD from sample surfaces perpendicular to the casting direction.

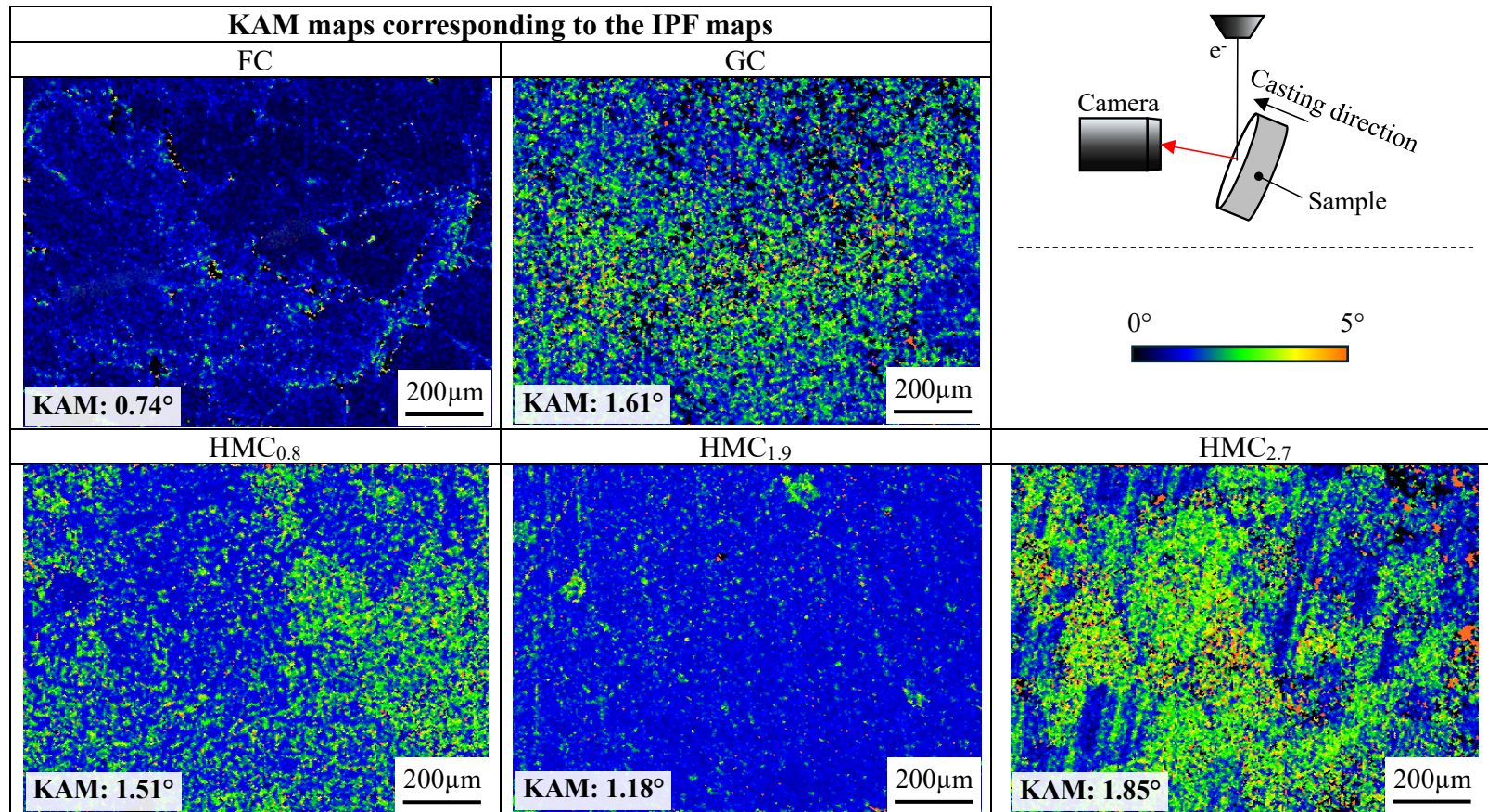


Figure 7. Kernel average misorientation (KAM) maps corresponding to the IPF maps in Figure 6 for the FC, GC, and HMC samples.

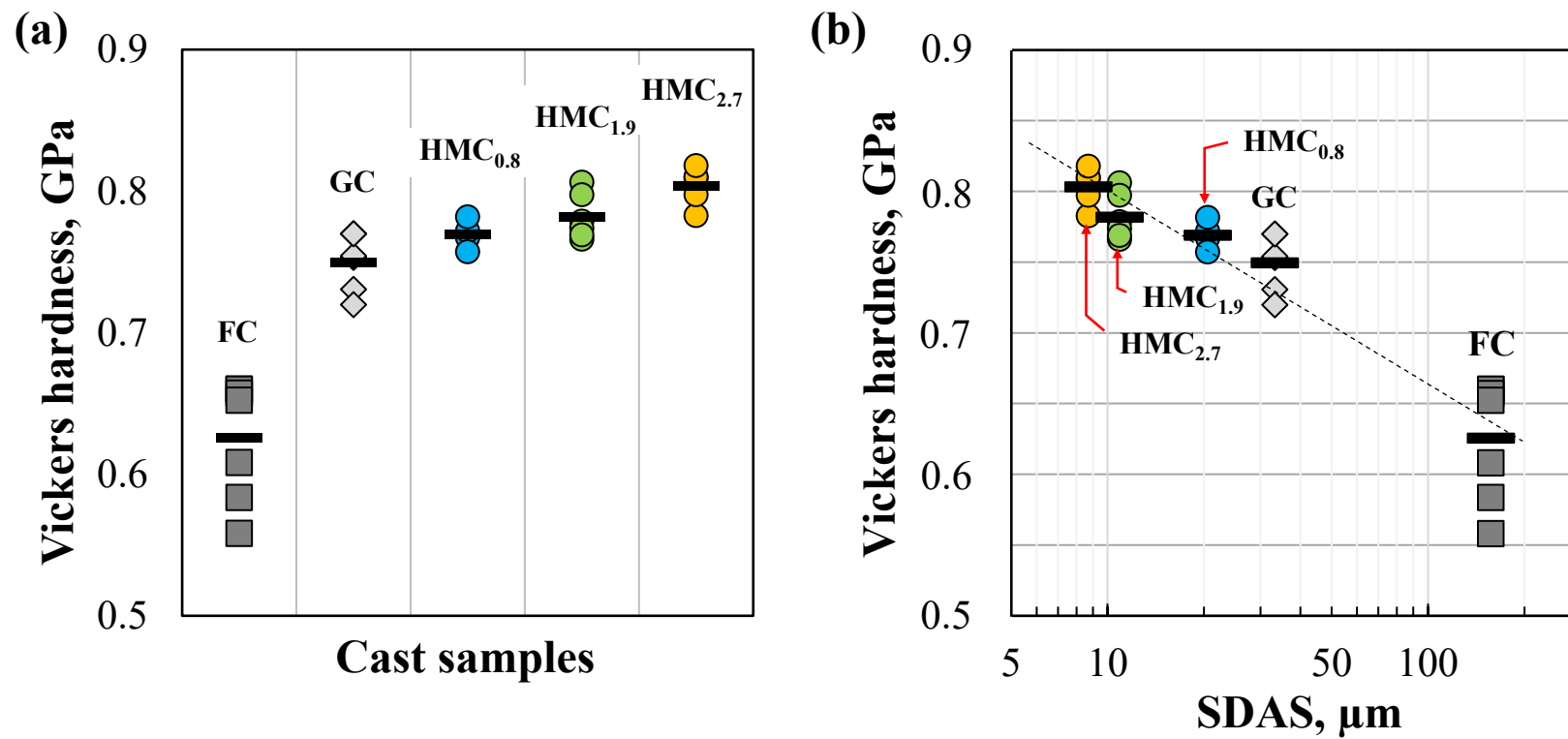


Figure 8. Vickers hardness data for FC, GC, and HMC samples: (a) Vickers hardness; (b) Vickers hardness versus SDAS.

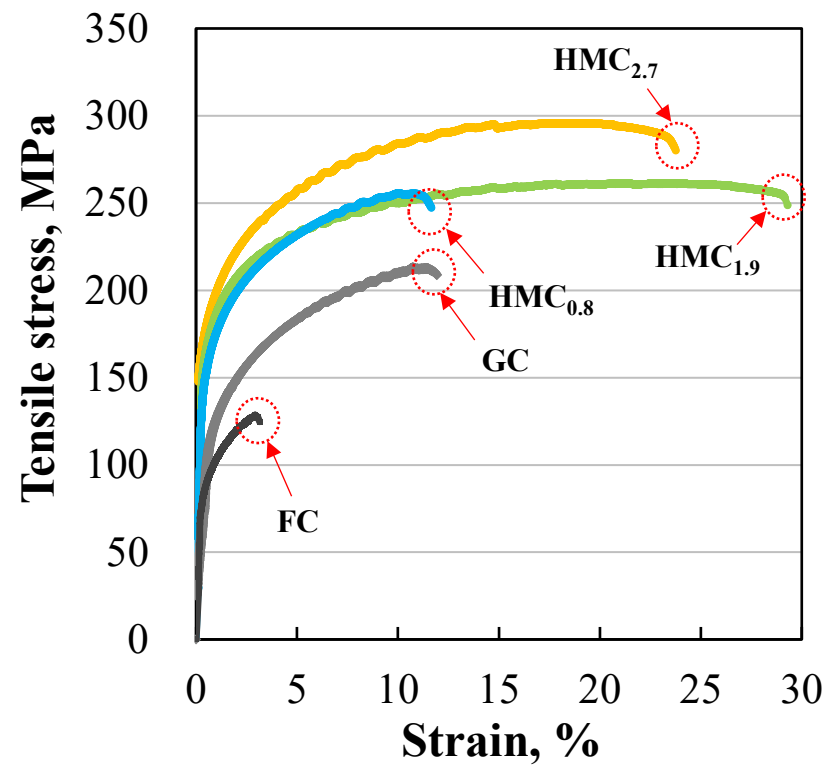


Figure 9. Representative curves of tensile stress–strain for FC, GC and HMC samples.

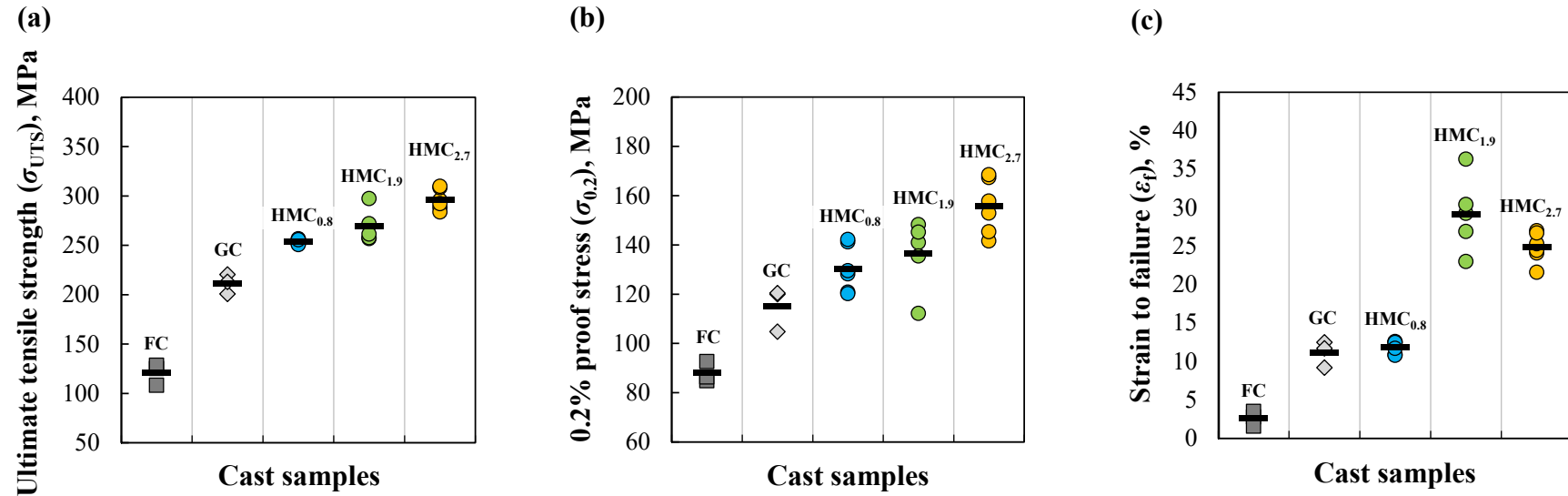


Figure 10. Tensile properties of FC, GC and HMC samples: (a) ultimate tensile strength; (b) 0.2% proof stress; (c) strain to failure.

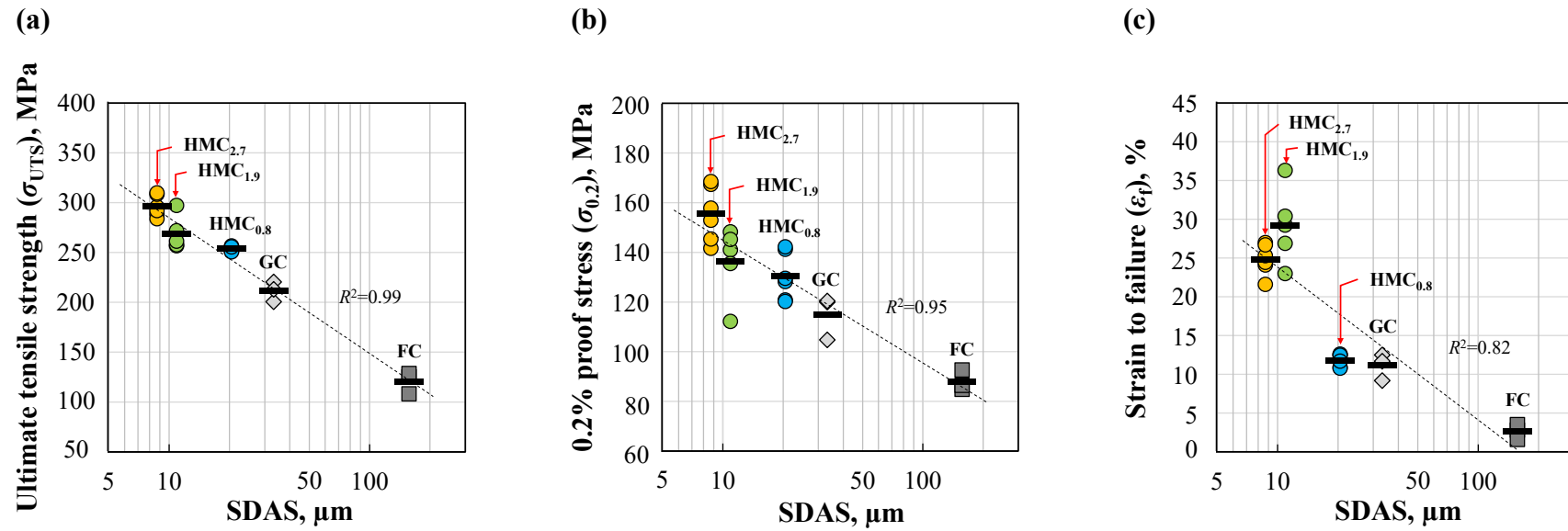


Figure 11. Relationship between tensile properties and SDAS for ADC6 samples: (a) σ_{UTS} vs. SDAS; (b) $\sigma_{0.2}$ vs. SDAS; (c) ϵ_f vs. SDAS.

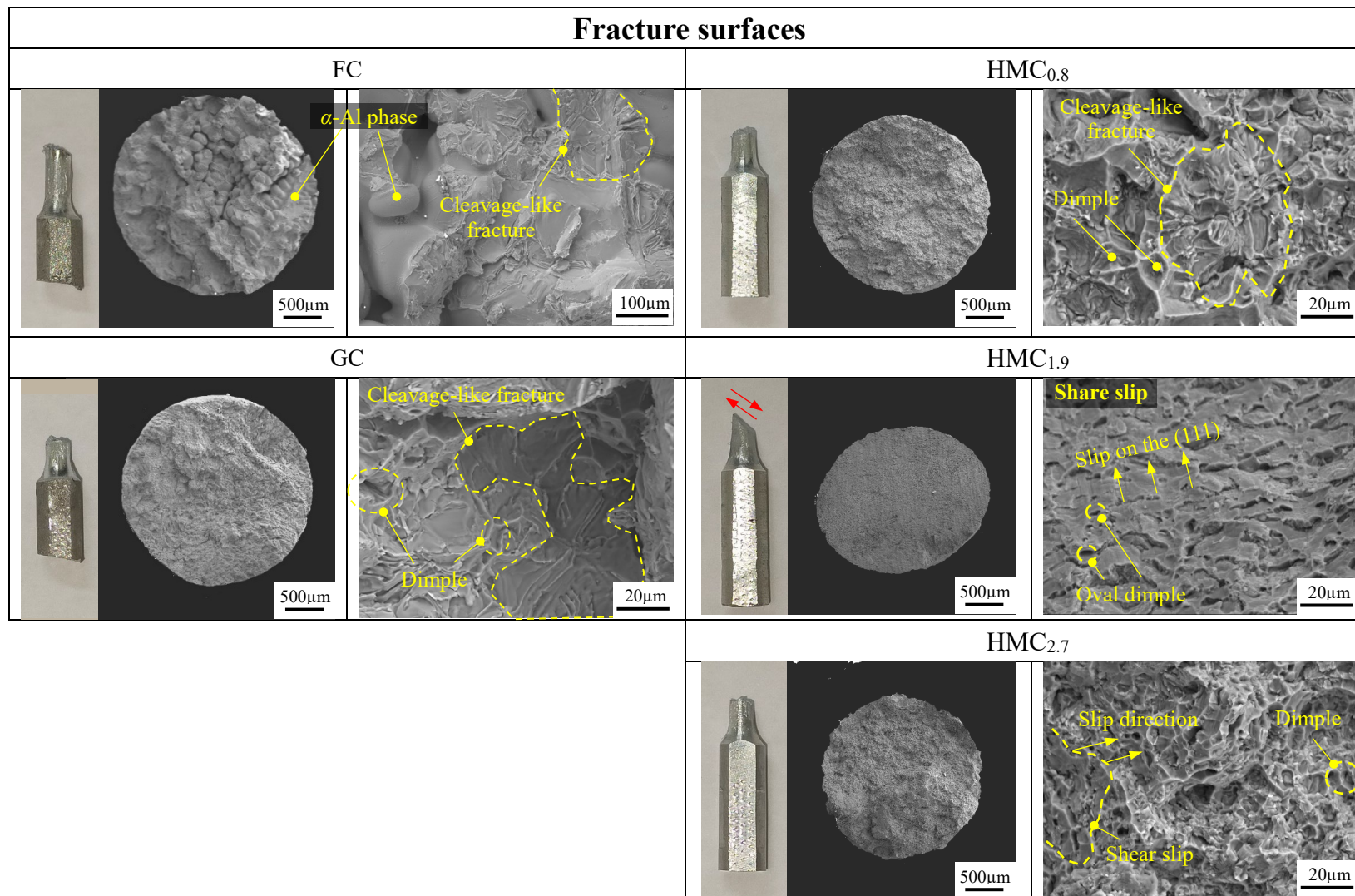


Figure 12. SEM images of fracture surfaces of the FC, GC, and HMC samples after tensile testing.

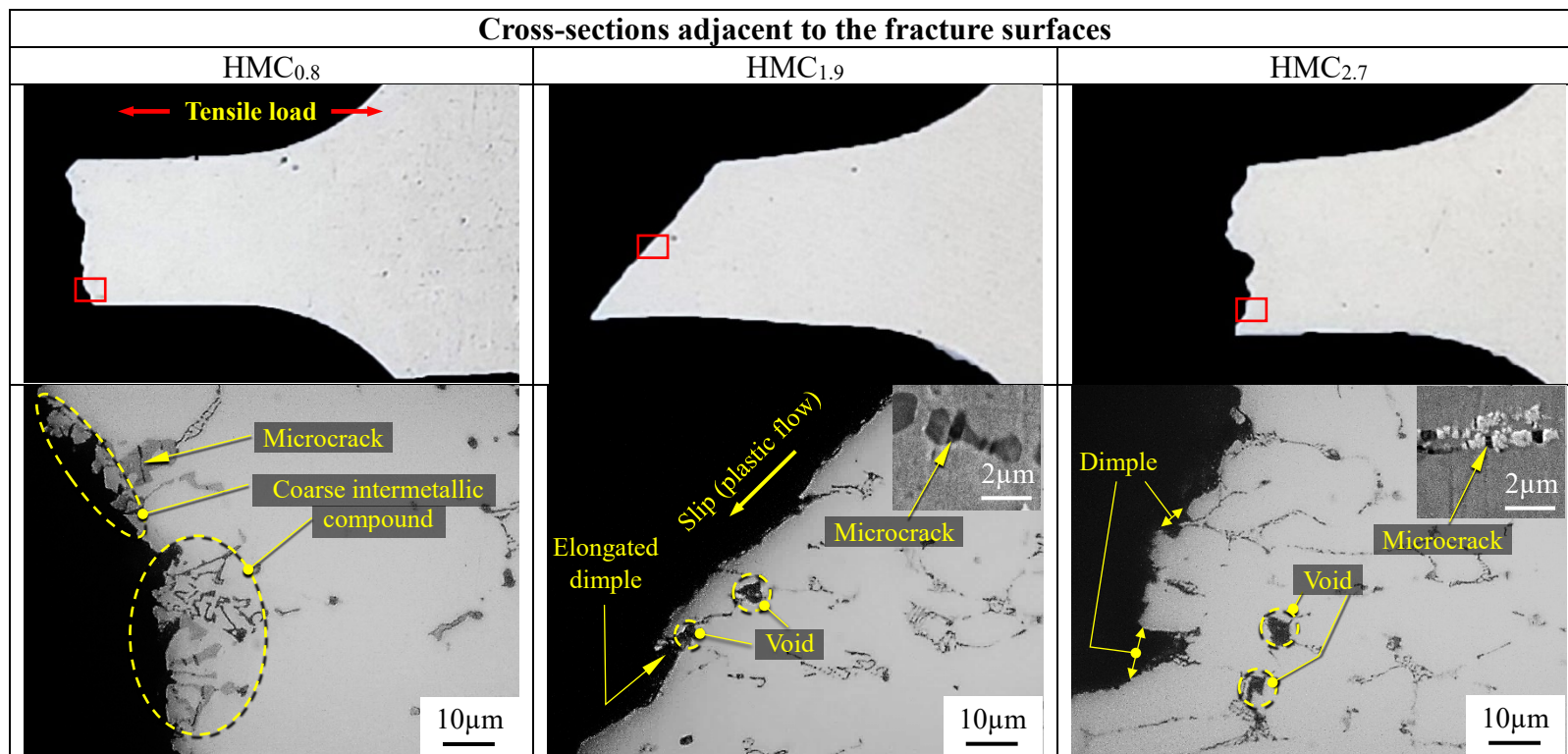


Figure 13. Micrographs of cross-sections adjacent to the fracture surfaces of the HMC samples.

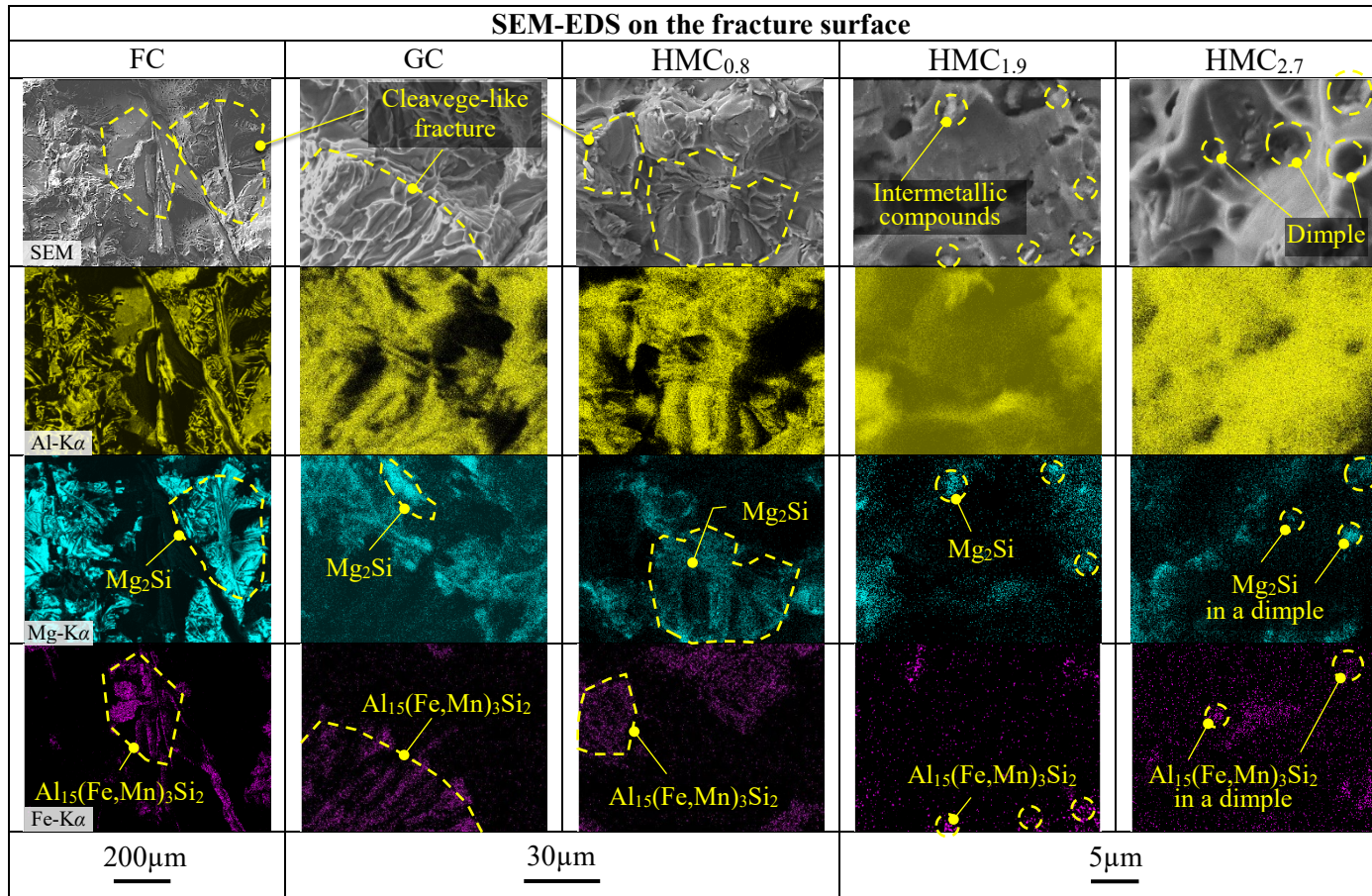


Figure 14. SEM images with element mappings on the fracture surfaces of FC, GC and HMC samples after tensile test.