**Sample 1: (Si-NF-Al)**

Video shows: Nanofoil reaction (first bonding image t=0.267 ms); Nanofoil contraction (t=1.335 ms), Nucleation of pores (t=1.602 ms); Pores with enhanced growth (t=8.277 ms); Cluster of pores after growth has ceased (t=146.583 ms)

**Sample 2: (Si-SAC-NF-Al)**

Video shows: Nanofoil reaction (first bonding image t=0.267 ms); Nanofoil contraction (second bonding image t=0.534 ms); Solder melting (third bonding image, t=0.801 ms); Expansion of solder melting (t=1.068 ms); Formation of bubbles in solder (t=1.335 ms); Nucleation of pores (t=1.602 ms); Pores with enhanced growth (t=39.516 ms); Cluster of pores after growth has ceased (t=135.102 ms)

**Sample 3: Si (Ti/Ni/Ag)-SAC-NF-Al**

Video shows: Nanofoil reaction (first bonding image t=0.267 ms); Solder melting (second bonding image t=0.534 ms); Expansion of solder melting (t=1.869 ms); Crack formation (t=5.607 ms); Ejection of solder (t=5.874 ms); Bubbles shrinkage (t=23.496 ms); Drifting of bubbles (t=49.128 ms)