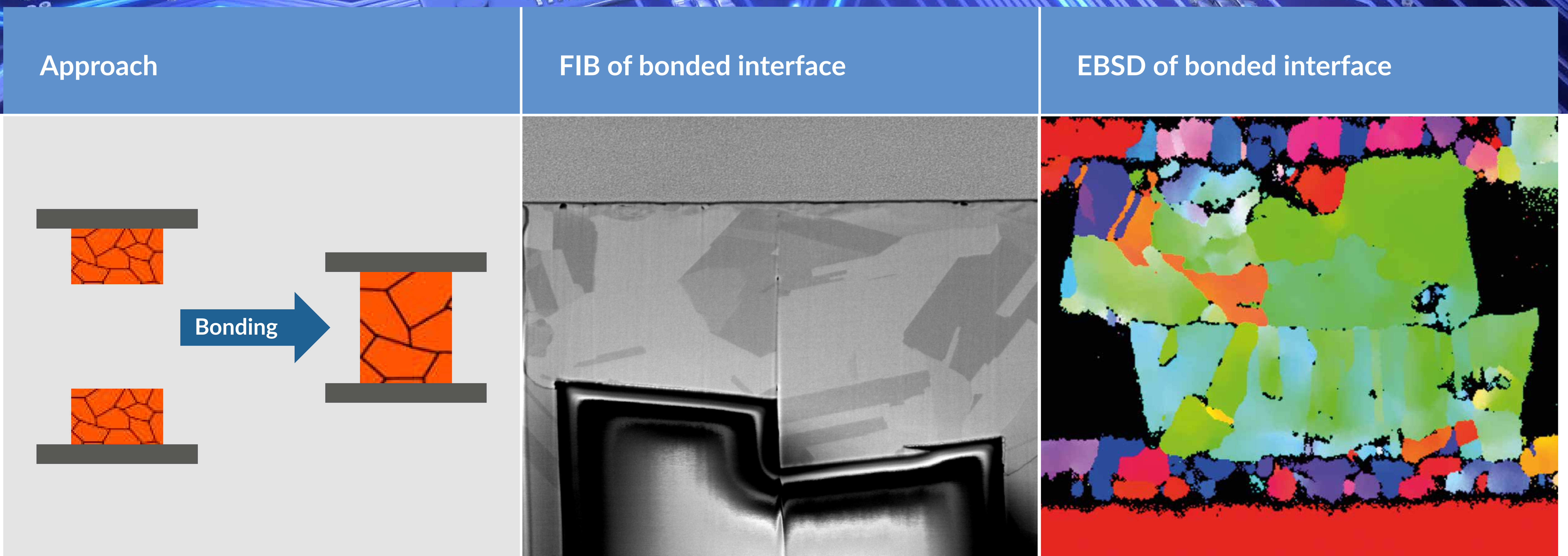
Spherolyte® Cu DB

mks
Atotech

Our Cu-to-Cu direct bonding approach – By metastable Cu



Metastable, low temperature annealing Cu

Spherolyte® Cu DB allows the deposition of highly pure, metastable Cu which enables direct Cu-to-Cu bond formations at ≤ 200 °C. The project is currently in R&D stage, but we have already successfully managed to develop a process with via filling capabilities, in which the deposited Cu can be kept at its metastable microstructure under defined conditions and requires only minimized annealing temperatures for the bonding step.
During the bonding step the metastable Cu recrystallizes, leading to a grain growth through the bond interface. Such a behavior cannot be observed with conventional, stable Cu.

Features and benefits

- Pure copper
- Process allows via filling
- Bond formation at low temperatures (≤ 200 °C)
- Good mechanical properties (ductility)
- Via filling performance