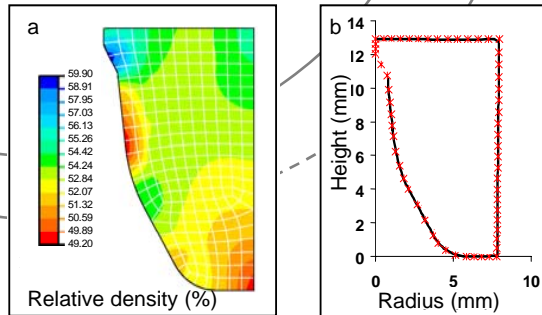


Multi-scale approach of WC-Co cermets: processing and microstructure

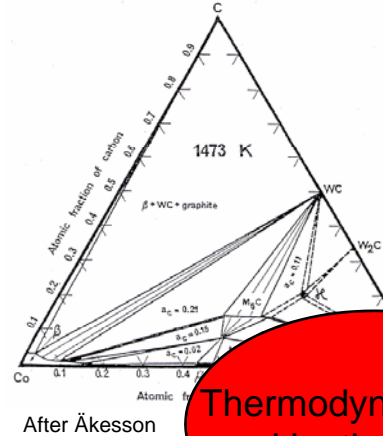
C.H. Allibert, J.M. Chaix, S. Lay, J.M. Missiaen, C. Pascal, P. Dorémus*, D. Bouvard**,

LTPCM (<http://www.inpg.fr/ltpcm/>), 3S* (<http://www.3s.hmg.inpg.fr/>), GPM2** (<http://www.gpm2.inpg.fr/>)

INPG/CNRS/UJF, Grenoble, France

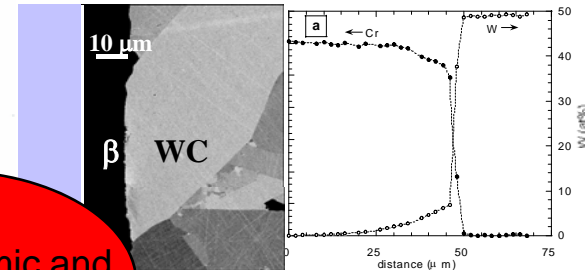


Finite element simulation of compaction and sintering of a drawing die. a: Density distribution after compaction
b: Measured and predicted dimensions after sintering



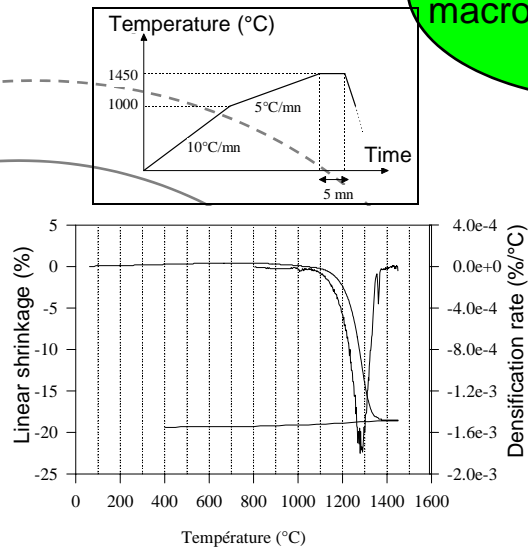
After Åkesson

Thermodynamic and kinetic study

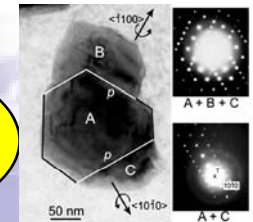


Dissolution study: diffusion couple and concentration profiles determined by EPMA in (Co-3Cr-1C)/WC 9h-1200°C

Compaction and macroscopic shrinkage

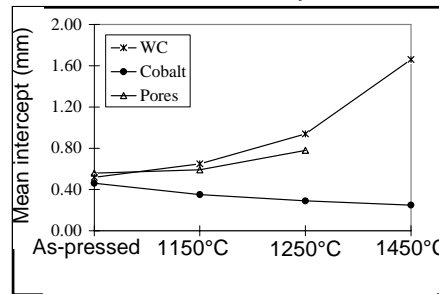


Microstructure

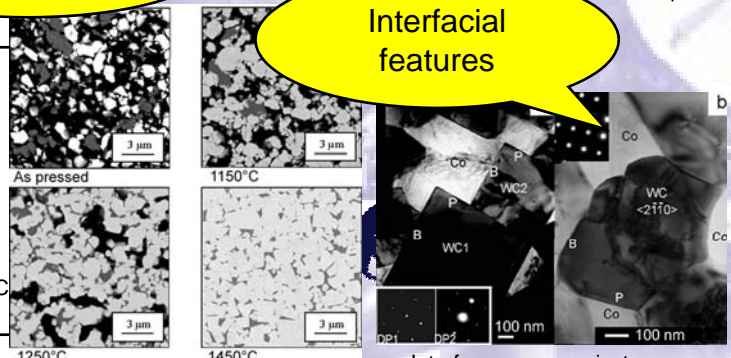


Special grain boundaries in WC powders

Quantification



Interfacial features



SEM micrographs of WC-Co during heating
Interface energy anisotropy
a) C-rich b) W-rich WC-Co alloy