

MML attract large crowd for ICMCTF Focussed Topic Session on elevated temperature nanoindentation

May 09 San Diego

MML confirmed their position as the authority on elevated temperature nanoindentation at a recent focus session at the ICMCTF conference in San Diego. Prof Ben Beake of Micro Materials Ltd delivered a one hour seminar to an eager audience during a lunchtime focus session. This focus session introduced the technique of elevated temperature nanoindentation, covering best experimental practice – including the importance of controlling the sample and indenter temperatures during the test - and the experimental conditions to ensure that indentation creep does not influence elastic modulus measurements.

Nanomechanical testing can become increasingly challenging at elevated temperatures, particularly when the test temperature increases to 750°C as is possible on the MML NanoTest system. Effective thermal control and good experimental design are critical to obtaining reliable hardness and elastic modulus measurements.

Practical examples were used by Professor Beake to illustrate a wide range of applications in thin film research – including cutting tool coatings (TiAlN, AlCrN etc), DLC, TBCs, solders, shape memory alloys, micropillar compression etc. The talk finished with a discussion of the additional challenges in nanoindentation testing above the oxidation temperature of diamond, and the steps that can be taken to obtain reliable measurements in the temperature range 500-750°C.



Micro Materials
Excellence in Nanomechanics

