



## **BLEN Enterprises Limited** **Training Division**

27 Cherry Tree Road, Beaconsfield, Buckinghamshire, HP9 1BN

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### **Structure, Properties and Applications of Advanced Structural Ceramics (1 day)**

#### **Overview**

Advanced structural ceramics have been developed and been commercially available for about 20 years. The initial emphasis was on developing and producing ceramics with the best combination of properties. Some suppliers have now realised that the high costs of such materials rendered them impractical for many applications. There is now a realisation that producing such ceramics with adequate properties at a competitive price is likely to lead to much greater volume sales. The main limitations at present are concerned with developing design and manufacturing experience with the materials to improve reliability and reduce costs. The materials considered will include Alumina (and its composites), Zirconia (Ceramic Steel), Silicon Carbide, Silicon Nitride, and Ultrahard materials (Industrial Diamond & related materials) in bulk form and as coatings.

#### **Designed For**

This course is suitable for senior managers and design and manufacturing engineers concerned with mechanical components or systems that could potentially benefit from the properties of ceramics, namely high hardness, good to excellent wear resistance, good to excellent corrosion resistance and/or high temperature capability.

#### **Objectives**

By the end of this course participants will be able to –

- Understand and interpret mechanical property test data for ceramics
- Have an awareness of the relevant design and manufacturing attributes of these materials
- Be able to liaise effectively with suppliers of advanced structural ceramics

#### **Outline Content**

- Material compositions and manufacturing processes
- Test Methods for ceramics
- Structures and properties
- Design considerations
- Examples of applications

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