

Composite Materials and Systems for Thermal Management, High Temperature Use and Fusion Reactor Walls			
	Organiser	Institution	Contact
	Francis Delannay	Louvain School of Engineering EPL Université catholique de Louvain – UCL Belgium	francis.delannay@uclouvain.be
	Bill Clyne	Dept. of Materials Science Pembroke Street Cambridge CB2 3QZ UK	twc10@cam.ac.uk
	Summary		
B4. III	<p>This Symposium will focus on composites designed primarily for use under demanding conditions. These will include high thermal gradients and temperatures. Other challenging environments, such as corrosive conditions, radiation fluxes etc, are also within the scope of the Symposium, as are applications in which resistance is simultaneously required to combinations of these, such as Fusion Reactor First Walls. Inevitably, attention will focus on matrices that are metallic, ceramic or intermetallic. The type of reinforcement is expected to cover a wide range of size and shape, but there will be particular emphasis on metallic or ceramic fibres. The objectives of incorporating such reinforcement will probably focus largely on enhancement of toughness for ceramic and intermetallic matrices, but more on properties such as stiffness, thermal expansivity, yield stress, creep parameters and wear resistance, without substantially impairing the toughness, for metallic matrices. The emphasis will be on materials in, or relatively close to, industrial usage, rather than on highly speculative systems. The Symposium will thus cover the processing, microstructure and performance of a wide range of (inorganic) composite materials and components, and also modelling of these characteristics. Specific issues may include differential thermal expansion effects, porosity, interfacial bonding, oxidation and other chemical reactions, radiation bombardment etc, and their effects on properties and performance.</p>		