The aim of the conference is to facilitate interaction between the research and industrial community and discuss the latest developments in this rapidly advancing field. The meeting responds to the demand for high quality production for both industry and consumer, which has led to rapid developments in materials science and engineering. This requires the characterisation of the properties of the materials.

Of particular interest to industry and society is the knowledge of surface treatment and contact mechanics of these materials to determine the in-service behaviour of components subject to contact conditions. Modern society requires systems that operate at conditions that use resources effectively. In terms of components durability, the understanding of surface engineering wear frictional and lubrication dynamics has never been so important.

Current research is focussed on modifications technologies that can increase the surface durability of materials. The characteristics of the system reveal which surface engineering methods should be chosen and as a consequence it is essential to study the combination of surface treatment and contact mechanics.

Combinations of different experimental techniques as well as computer simulation methods are essential to achieve a proper analysis. A very wide range of materials, starting with metals through polymers and semiconductors to composites, necessitates a whole spectrum of characteristic experimental techniques and research methods.

The conference is a result of a series of meetings that started as early as 1993 in Southampton on contact mechanics and previous meetings on the wider field of material characterisation dating from the 2003 conference in Santa Fe, New Mexico. The papers presented at all those conferences are permanently archived in digital form at www.witpress.com/elibrary where they are easily accessible in Open Access format to the international scientific community.

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**Reduced Fee for PhD Students**  The Wessex Institute believes in the importance of encouraging PhD students to present and publish innovative research at its conferences. As a result, the Institute offers PhD students a much reduced conference fee.

Conference Topics

The following list covers the topics to be presented at the meeting. Papers on other subjects related to the objectives of the conference are also welcome.

**Computer methods and simulation**

**Experimental and measurement techniques**

**Mechanical characterisation and testing**

**Polymers and plastics**

**Advances in composites**

**Micro and macro characterisation**

**Corrosion and erosion**

**Damage, fatigue and fracture**

**Recycled materials**

**Emerging materials, incl. additively manufactured; high entropy alloys; soft materials.**

**Materials and energy**

**Contact mechanics**

**Surface modification and treatments**

**Tribomechanics and wear mechanisms**

**Biomechanical characterisation and applications**

**Residual stresses and fatigue processes**
Location

Lisbon is one of the oldest cities in the Europe and predates other European capitals such as London, Paris and Rome. Its compact historic centre means that it is easy to explore through the characteristic narrow and winding streets. The city boasts many museums, squares, towers, gardens and cafes as well as the Castle of St George which overlooks Lisbon in its entirety. The castle, dating back to the 6th Century, is one of the city’s top attractions and visitors able to climb the towers and walk along the walls. Due to its coastal location there are also fantastic beaches where it’s possible to make the most of the warm summer climate.

Venue

The conference will take place at the TRYP Lisboa Oriente. The hotel is located in the heart of the Parque das Nações, alongside the ultra-modern transport hub at Gare do Oriente and the Vasco da Gama Bridge (longest bridge in Europe). The hotel is just a few minutes from the centre of the city and 3km from Lisbon International Airport, it is also in the vicinity the Oceanarium, the Vasco da Gama shopping mall, and the marina. It has more than 200 rooms, a fitness centre, a private garage and Free Wi-Fi access throughout the hotel.

Submission Information

Abstracts of no more than 300 words should be submitted as soon as possible.

Abstracts should clearly state the purpose, results and conclusions of the work to be described in the final paper. Final acceptance will be based on the full-length paper, which if accepted for publication must be presented at the conference.

The language of the conference will be English.

Online submission: www.witconferences.com/materials2019

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