

## Intensive Course on Electrical Contacts, 2018

**The 2018 course will be held at the Hotel Albuquerque, Albuquerque, New Mexico, U.S.A. from October 10<sup>th</sup> to October 13<sup>th</sup> prior to the 29<sup>th</sup> International Conference on Electrical Contacts together with the 64<sup>th</sup> IEEE Holm Conference on Electrical Contacts (October 14<sup>th</sup> to 18<sup>th</sup>). Below is the course background.**

Dear Colleague,

I am writing to tell you that the IEEE Holm Conference will again be hosting the Intensive Course Electrical Contacts. In 2018 Drs. Jackson (Contact fundamentals & fretting), Martens (Corrosion & contact degradation), Coutu (Switching low currents & MEMS switches), Slade (The electric arc, circuit interruption & the effect of arcing on switch performance), McBride (Switch design & switch contact materials), and Timsit (design & failure of electrical connections), each of whom are considered world-class experts in their field, will be the Course lecturers; each has made major advances in the understanding of electrical contact phenomena. Three have received the Ragnar Holm Scientific Achievement Award in recognition of their scientific contributions to the subject.

The 2018 Intensive Course has been completed revised to reflect recent needs in understanding very low contact force phenomena and the effects of high frequency currents. While doing this, the Course still covers the broad range of electrical contact situations, from very low currents that are seen in electronic circuits, to medium currents (e.g. automobile and household level values) to currents expected in distribution circuits: listed below are examples of typical topics:

- Making contact and surface finish effects
- Making connections and connector design [low and high current]
- Switching contacts ac and dc design considerations [low and high current]
- The effects of arcing on contacts, erosion, welding and contamination
- Contact materials for connectors and for switching contacts
- Contact finishes
- Contact lubrication
- Contact failure mechanisms and how to analyse them
- Corrosion and the effects of ambient environments
- Elements of switch design
- Elements of connector design

The Course includes class problem-solving exercises so that participants will learn how the Course material can be applied. A participant in this Course will thus leave the sessions with a thorough and broad knowledge of the subject. The four days allows our teaching approach to include practical examples of a wide variety of contact use. It also gives practicing engineers detailed knowledge of contact technology to resolve their own practical design problems.

In 2018 we have again decided to link the Course more closely to the IEEE Holm Conference on Electrical Contacts (also in 2018 with the International Conference on Electrical Contacts) by holding the Course the 4 days before the Conference. Thus the Course will run from Wednesday October 10 to Saturday October 13. The Conference begins on Monday October 14. We are doing this for two reasons:

1. There has been a persistent request by the Conference participants for an in-depth review of the complete subject of Electrical contacts. This is not possible in a 3-day Conference

where the latest scientific studies are being presented. Thus we thought that if we presented the Course just ahead of the Conference it would satisfy this need. It will also give those who are new to the subject an excellent grounding in the subject that will enable them to participate more fully in the Conference.

2. The Intensive Course has been extended from 3-days to 4-days in order to expand the course's content, to give the participants more time to interact with the lecturers and to allow time for a more in-depth discussion of specific topics
3. Although this means working on the Weekend, it does give participants some leverage when requesting time to attend the Course in these times of strict budget guidelines and budget restrictions in Engineering Departments.

Each participant will receive the full lecture notes plus the 1200 page book Electrical Contacts: Principles and Applications (2<sup>nd</sup> Edition) that was published in 2013. One important aspect of the course will be the 3 sessions where the participants can ask about their own real world problems or their own unique questions. The Lecturers will address them and also lead any discussion of them that may arise from the other participants.

Over the past 40 years the course has continually evolved to ensure that it remains relevant to the contact problems of the day. I believe that if you send your new engineers and your engineers who are new to the subject of electrical contacts, they will benefit enormously. Please click on the Holm Conference Web Site to see details of how to enroll:

<http://www.ieee-holm.org>

Of course I am always available to answer any questions you may have about this course.

My very best wishes,

Paul Slade, (PaulGSlade@verizon.net)

Director of the Intensive Course on Electrical Contacts