



**SEKTIONEN FÖR DETONIK OCH
FÖRBRÄNNING**
www.sdfsweden.se



The Swedish Section for Detonics and Combustion
affiliated with *The Combustion Institute*
(www.combustioninstitute.org)

NEWSLETTER 1/2016
2016-04-26

The Combustion Institute

For recent information from The Combustion Institute, please see the attached PDF File.

Peace Technology

The *Second Circular and Call for Papers* for the announced D8/F1 conference in September 2016, which in the previous newsletter was said to be distributed in January, did not come about.

The reason is that the announcement was not met with the expected response. One of the reasons for that might be that the disposal and the peace technology aspects on ammunition, ordnance and other energetic material items was not a perfect match for "igniting" any substantial interest.

Since demilitarization, incineration of municipal solid waste (MSW) and peace technology are examples of applications requiring good knowledge of zone reaction behaviour, it was decided to keep D8 and F1 apart, leaving the Peace (F) series to the Swedish Organization for Peace Technology (SOFT). For a presentation of this non-profit organization, see Newsletter 4/2015, p. 5. SDF members will be kept posted up of SOFT's activities and seminar/conference plans.

Eighth International Disposal Conference (D 8)

This conference was announced in the previous Newsletter (No. 5/2015). Being now a down-right disposal matter, venue (has to be decided upon) and date (what about the traditional "November" goose event) have to be reconsidered. For this restart, we depend on your expressing an interest to participate. So, the call for papers is on.

Studiebesök i Karlskoga och Karlstad?

Önskemål om ett tvådagars studiebesök i Karlskoga och Karlstad har framförts. Lämplig tidpunkt kunde vara i september-oktober 2016. För att undvika alltför lång frånvaro från arbetet har vi funderat på en **lördag eller söndag samt fredag eller måndag** som besöksdagar, om det nu alls är möjligt att få någon besöksvärd att ställa upp en **lördag-söndag**.

Hur vi ska ta oss dit och hur vi ska övernatta får bli en senare fråga efter att vi undersökt om det alls finns något intresse för ett sådant här besök.

Även om AB Bofors, Nobelkrut och FFV Zakrisdalsverken inte längre existerar så finns många avläggare till dessa klassiska försvarsföretag kvar i Karlskoga och Karlstad.

I **Karlskoga** finns t. ex. *Saab Dynamics* (luftvärns- och pansarvärnsmissiler, mm), *NAMMO LIAB* (sprängämnesgjutning, mm), *Saab Bofors Test Center* (provning, skjutfält, mm), *BAE Systems Bofors* (artillerisystem, mm), *EURENCO Bofors* (krut, sprängämnen,

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mm) , Dynasafe (ammunitionsdestruktion, mm), Exova (livslängdsteknik explosivämnen), Cambrex (syntes av bl a explosiva ämnen, mm), m. fl. Dessutom finns museet Alfred Nobels Björkborn (herrgården och laboratoriet) och *Bofors Industrimuseum* att besöka.

I **Karlstad** har Värmlandsregementet avvecklats och I 2:s kaserner har nu blivit bostäder, men för några år sedan uppfördes ett helt nytt Brigadmuseum i Karlstad. Även FFV Zakrisdalsverken (ammunitionsfabrik) avvecklades, men en hel del har bevarats genom att *Sprängtekniska Museet* inrättats där. Företaget *Life Time Engineering* har en anläggning i Karlstad för miljöteknisk provning, kemisk analys, livslängdsanalys, mm, för energetiska material. Men även produktion av viss pyroteknik.

Inga besöksobjekt är ännu kontaktade, men det finns en del att välja på om intresse för studiebesök finns. Ordf. Ola Listh, som håller i trådarna, emotser synpunkter på och förslag till program samt – inte minst – intresseanmälningar.

Conferences

For more details, visit www.sdfsweden.se

2016

- 05-09--10 Innovation Symposium: Promoting Innovation through Collaboration and Experimentation.
Defence Academy of the United Kingdom, Shrivenham.
www.symposiaatshrivenham.com.
- 05-09--13 29th International Symposium on Ballistics.
Edinburgh, Scotland. www.ballistics.org. More about this conference in the Appendix.
- 05-17--18 New Energetics Workshop (NEW).
Organized by Swedish Defence Research Agency (FOI) and EURENCO, Stockholm, Sweden. www.foi.se/new
- 06-28--07-01 47th International Annual Conference of the Fraunhofer ICT.
Energetic Materials: Synthesis, Characterization, Processing.
www.ict.fraunhofer.de.
- 07-09 12th Workshop on Pyrotechnic Combustion Mechanisms.
Grand Junction, Colorado, USA. <http://ipsusa.org/index2.htm>.
- 07-10--15 42nd International Pyrotechnics Seminar.
Grand Junction, Colorado, USA. <http://ipsusa.org/index2.htm>.
- 07-31--09-05 36th International Symposium on Combustion.
COEX, Seoul, Korea.



Education and Training

2016

China**Tsinghua University, Beijing.**

07-19--25 *2016 Tsinghua-Princeton-CI Summer School on Combustion.*
Combustion Chemistry, Combustion Physics, Dynamics of Combustion Waves
in Premixed Gases, Fundamentals of Unsteady Combustion and Combustor
Processes, and Mechanism Reduction and Computational Flame Diagnostics.

Germany**IMPACT-AE Consortium, Berlin/Dahlewitz.**

05-25 Workshop of the IMPACT-AE Project.
Session 1: Design System Development for clean Combustors
Session 2: Emission Modelling of Aero Gas Turbines
Session 3: Modelling of Wall Cooling
Session 4: Detailed Flame Diagnostics
Session 5: Technology Demonstration.
www.arttic.eu, beteille@arttic.eu.

USA**Franklin Applied Physics.** www.FranklinPhysics.com, info@franklinphysics.com.

07-25--29 *Electro-Explosive Devices: Functioning, Reliability, and Hazards.*
Among the topics are: definitions and history of explosives, types of pyro-
technics, explosives and propellants, sensitivity and functioning mechanisms,
safety versus reliability.



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12 April 2016

Dear Section Chairs and Section Administrators:

The Combustion Institute 2016 Board of Directors Election is approaching, 15 June -15 July 2016. The Combustion Institute Office will be preparing member information for the electronic election company by pulling "Active" records information from the Combustion Institute website on 18 May 2016. An "Active" record is a member who have been approved by the Section Administrator as a valid member of their section. As noted in the 14 December 2015 letter *"Any section that does not process records through the Combustion Institute website data base system or give the combustion institute adequate information on the membership listing, those members will not be eligible to vote in the upcoming 2016 Board of Directors Electronic Election."* If you need instructions or assistance in the approval process contact the Combustion Institute Office.

Section Reports are due to the Combustion Institute office, office@combustioninstitute.org, by 30 June 2016. In the Section Report include the following: Listing of Officers, total number of active members, any activities over the past 2 years the section has held or participated in. We recommend submitting your Sections report in a pdf format. The Combustion Institute office will post all submitted 2016 Section reports to the Combustion Institute website for membership to view.

The Members Meeting will be held on Monday 1 August 2016 and the Combustion Institute Committee will meet on Tuesday 2 August 2016.

Please remind your members of the upcoming Deadlines:

21 April – Work in Progress Poster submission.

16 May – Bernard Lewis Fellowship Nominations Submission

1 June – ICISS submission deadline for the 2017 year

7 June – Last day of Early Registration for the 36th International Symposium on Combustion

If you have questions or concerns please contact the CI Office.

Best Regards,

Tina McGough

The Combustion Institute

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Appendix

29th International Symposium on Ballistics, Edinburgh, Scotland 9-13 May 2016

The ISB provides an opportunity for ballistics scientists, engineers, and others to report, share and discuss current research and advances in ballistics and their visions for the future. The symposium allows exposure to the most current state-of-the-art technology in ballistics, provides opportunities for interactions with some of the world's leading experts in the field of ballistics technology, and offers the chance to present, exhibit, and share scientific research and development with an international group of professionals.

Edinburgh, Scotland, is known as the “Athens of the North” because of its Georgian neo-classical buildings. It also has a fascinating medieval old town that is dominated by the 12th century hilltop castle, home to Scotland’s crown jewels and the Stone of Destiny, traditionally used in the coronation of Scottish rulers and, since the time of Edward I, all British monarchs. These are just some of the many attractions to see in the administrative and judicial capital of Scotland. There's also the Royal Yacht "Britannia" at Leith.

We therefore decided that holding the 29th ISB in Edinburgh presented a unique opportunity for you to spend time in a very special place. From the outset we wanted to make the 29th ISB a very special and memorable event. We have therefore arranged to hold our main networking event in the Castle, which we will have all to ourselves. You will be able to wander around the Castle hearing about its history and the history of Scotland. As a ballistics expert you can even think about how you might have attacked it some 300 years ago!

To round off our time in Edinburgh we will hold the dinner in the National Museum of Scotland, a building that has to be seen to be believed. You will have the opportunity to wander around the exhibits to learn the many ways in which Scotland has contributed to the cultural and scientific heritage of many countries around the world.

The symposium will be held in the world class Edinburgh International Conference Centre (EICC), a place we are sure offers the best venue the symposium has ever graced. It is *the* place for you to make your contribution to Ballistics Science.

We believe the 29th ISB will be a special symposium held in a memorable and special place. We look forward to welcoming you to the symposium and offering you that renowned Scottish hospitality.

Website: http://www.ballistics.org/29th_isb.php

You can register via the website, or even at the Symposium door! The fee is around USD 2 000.

Courses on ballistics will be held on Monday 9 May at the EICC.

The cost of a full day course will be \$425, and the following courses should be held:

- Half day on Internal Ballistics (IB) of Guns (an introduction) to be given by Clive Woodley, QinetiQ (AM).
- Half day on IB Modelling to be given by Frazer-Nash Consultancy (PM).
- Half day on Warhead Mechanisms by QinetiQ (AM).
- Half day on Armour and Protection by QinetiQ (PM).
- Full day on Energetic Materials by Edinburgh University (split into AM and PM sessions), comprising the following:
 1. Explosives and Propellants under Extreme Conditions – highlighting structural phase changes induced by extreme conditions; opportunities for recovery of higher density forms back to ambient conditions (AM).
 2. Computational Studies on Explosives and Propellants – prediction of structural changes; effects of P and T on properties such as heat capacity; progress in correlating sensitivity to crystal structure (AM).
 3. New Formulations – energetic co-crystals; high-nitrogen materials; new composites (PM).
 4. New formulation techniques – Resonant Acoustic Mixing; Continuous Manufacture and Crystallisation of energetic materials (PM).

We hope to allow anybody who pays to attend the courses to attend any AM course and any PM course. Contact Clive Woodley for more information at 29th_ISB@ballistics.org.

Professor Bo Janzon