

## LEAD OUT

Our Chairman Peter Marshall and Secretary Tony Gordon attended the kick off meeting for "LEAD OUT" the EU collective research project - Low Cost Lead-free Soldering Technology to improve competitiveness to European SME that started on 15 September. In the run up to July 2006 SMART will be assisting in updating the European Electronics community with the project's results and is the active partner developing feedback by expanding our already successful PPM monitoring program.



## A FINE FELLOW, NOW A SMART FELLOW!



Dr. Tim Reynoldson, Electronic Components & Manufacturing, Electronics Unit,2, at Department of Trade & Industry is hanging up his DTI boots and retires at the end of October. Tim has been a staunch supporter of SMART

Group, especially with our environmental activities. After 22 years working in electronics and 10 years before that at MoD, we would like to wish him a long & happy retirement. Mike Judd, PR Director of SMART Group presented Tim with his SMART FELLOW AWARD at an excellent hostelry near the DTI offices. Many friends from industry, trade associations and colleagues attended.



The organisers of BRIGHTON 2004 - Bob Willis, Dr. Colin Lea OBE and Mike Judd.

## WELCOME TO BRIGHTON

Our European Conference reaches a landmark. After almost a decade of lead-free events, including the launch of the original review 'An Analysis of the Current Status of Lead-Free Soldering' commissioned by DTI in 1999 and updated a year later, together with the SMART Annual Lead-Free Seminar, soon to be in its 7th year, this major biennial event in Brighton is dedicated to lead-free manufacturing & test.

We are confident that it will answer all the outstanding questions facing our industry at this difficult & crucial time. As our conference opens there are less than 20 months to be ready to meet the WEEE and RoHS legislation. Your attendance at our BIG event is appreciated and we are confident that you will find your time here beneficial.

We have assembled some of the best and most experienced industry experts, who will not only be presenting at the 9 workshops, 3 focus presentations and 2 keynote speeches, but they will also be available informally over the next 2 days.

THIS IS A UNIQUE OPPORTUNITY - Thanks for your support

REED EXHIBITIONS WISH SMART GROUP A SUCCESSFUL EUROPEAN CONFERENCE, SEE YOU THERE!

# Lead-Free Materials & Legislation Seminar

Dublin - Thursday, 23rd of September 2004.

The day dawned bleak, grey and miserable yet ended in glorious sunshine, a fitting end to what had been another successful Seminar run by SMART Group at the Citywest Hotel on the outskirts of Dublin. The committee had prepared a very full day with a total of six speakers, three speaking on materials in the morning and three more in the afternoon concentrating on the legislation concerning WEEE and RoHs.

Starting proceedings we were treated to a most professional and informative presentation by Vincent Synnott of Flint on the present conditions of lead-free components. The increasing use and the necessities of preparation in the phasing out of leaded components was dealt with. Vincent also brought to our attention the future obsolescence of certain types and sizes of product and the implication this would have on present designs. What followed was a thoughtful and interesting talk given by Pete Starkey of Starkey Technical Services on the present and future design of the PCB. Using data collated from various sources Pete highlighted where we are at and more importantly, mapped out the various options available to the industry in the future. He brought to our attention the lack of a material supplier to the PCB manufacturers within the islands, something that must be of some concern to all.

To prepare us for lunch, we were graced by the presence of Mike Fenner of Indium, who, while not completely indoctrinating us did grant us an insight into the world of solder paste and all its present and future foibles. Temperatures, solder mixes, reliability issues and finishes were all touched upon in some detail, giving much food for thought.

After a satisfying lunch we returned to be enlightened by Noel Duffy of Clean Technologies on where electronic manufacturing and design have to get to within the next 18 months to comply with new legislation. The technical and cost implications to both the manufacturer and end-user were highlighted and could end up being a nightmare for production, material and purchasing staff if proper steps are not put in place quickly.

Padraig Kelly from Irish Rail alerted us to our lack of present readiness to WEEE and RoHs. His survey showed us our present position and attitude which, in itself, should be a wake-up call to us all. His message that time is running out seems to have been heeded by very few in the industry, leaving us with the prospect of a hectic time ahead in preparing properly for the introduction of the new rules.

We were fortunate to have Sean O'Suilleabhain from the Department of the Environment, Heritage and Local Government. Sean laid out at some length how, when and where the legislation would be introduced. It has yet to be decided how this will be policed but with the proposed outline fine structure, compliance would seem to be the only way forward. All speakers took questions from the floor and audience participation was incisive and valued. The Smart Group would like to thank every one that attended and congratulate all speakers on an excellent effort by them. We look forward to having just as successful a seminar in December when the emphasis will be firmly placed on manufacturing.

Noel Hughes, Technical Committee, SMART Group Ireland



Left to Right:  
 Mike Fenner - Indium Corporation  
 Sean O'Suilleabhain - Dept of the Environment, Heritage and Local Government  
 Noel Hughes - SMART Technical Committee  
 Noel Duffy - Clean Technologies Cork  
 Padraig Kelly - Irish Rail  
 Peter Starkey - Starkey Technical Services  
 Vincent Synnott - Flint Distribution



Moss Dore (SMART Technical Chairman) launching the Lead-Free User Group website [www.leadfree.ie](http://www.leadfree.ie). The website has gone live but is not fully completed as yet.

Your contact for SMART Group Ireland is Katherine Barry, our Administrator  
 Tel: +353-21-4904025  
 Email: [katherine.barry@nmrc.ie](mailto:katherine.barry@nmrc.ie)



## Dolby Laboratories host SMART Group discussion forum



Dolby Labs based in Wootton Bassett kindly hosted a discussion forum on the DTI proposals for the UK implementation of the WEEE and RoHS Directives. The meeting was formally opened by the chair, Tom Perrett of Tin Technology representing SMART Group, who introduced Nick Jolly of the DTI.



Nigel Burt, Product Engineering Manager at Dolby welcomed all the delegates and then introduced John Blunden, Dolby's Production Director. Nigel then gave a short introductory presentation and a full attendance of delegates introduced themselves. Nick Jolly gave a short presentation about the Directives and the Consultation documentation. A lively debate followed.



SMART Group would like to thank all the participants, Nick Jolly and especially Nigel Burt for his exceptional pre-planning in order to make this event a success. Dolby also gave us a treat at the end of the day with a Dolby Digital Cinema demonstration.

Pictures from top to bottom:

The delegates attending this important event.

Nick Jolly - DTI, John Blunden - Dolby Prod Director, Nigel Burt - Dolby and Tom Perrett for SMART Group.

The audience in the Dolby cinema.

Winners of the best contributions of the day.

(Ray Bagley of Alstom sadly left before this presentation - Ray thanks for your contribution).



## Advanced Reliability and Test Techniques for Lead-Free Assemblies



Tin Technology opened its impressive facilities for this SMART Group seminar and practical workshop. The first half of the day we looked at the theoretical side to testing, with the afternoon session allowing delegates to obtain hands-on experience with many of these techniques.

Subjects during the day included:

- X-ray analysis of lead-free joints
- Scanning Acoustic Microscopy
- Solderability testing
- Temperature cycling/ Accelerated life testing
- Contamination
- Surface Insulation resistance
- Microsectioning/optical and SEM inspection
- Mechanical joint testing techniques



Pictures from top to bottom:

A presentation by Concoat.

The delegates attended a busy day.

The presenters with Tony Gordon - SMART Secretary (far right).

Delegates tour the labs of Tin Technology.



## ALTERNATIVE CIRCUIT TECHNOLOGIES A NETWORKING DAY

Haydon Centre, Swindon,  
22nd September 2004

SMART Group participated in a networking day that was supported by IMAPS. For those involved in designing, supplying, using, manufacturing or those just curious to find out more about the manufacture and assembly of circuits, when higher performance than conventional FR4 circuit boards can supply is required, this was a unique event. This type of focused informal meeting is extremely popular in the USA, where they are known as Vendor Days. A table-top exhibition was the centre piece of the day.

## DIARY 2004

### 16-18 November

SMART Group European Conference  
The Old Ship Hotel, Brighton, England

### 2 December

SMART Ireland Lead-Free Design  
for Manufacture  
NMRC, Cork, Ireland

### 7 December

Pin In Hole/Intrusive, Design & Assembly Workshop  
DEK, Weymouth

## DIARY 2005

### 26 January

BGA & Quality Control Workshop  
Tin Technology, St.Albans

### 3 February

7th Annual Lead-Free Seminar  
+ Table-top exhibition  
Wycombe FC Conference facility

### 11-12 May

Nepcon Electronics Exhibition  
Brighton, England



11-12 MAY 2005 - BRIGHTON METROPLE [www.nepcon.co.uk](http://www.nepcon.co.uk)



## Lead-Free Manufacturing - Seminar, Hands-on and Exhibition

This SMART Group Scotland seminar was part of a triangle of events in UK and Ireland relating to lead-free manufacturing. Held at the ISLI, Alba Centre in Livingston on 23rd September it gave delegates the opportunity to hear expert opinions on the issues raised by members following an April event. The presentations covered topics including solders, components, substrates, inspection and training. The seminar was supported by a tabletop exhibition which included hands-on demonstrations of soldering with lead-free alloys.

William Campbell, SMART Group Scotland welcomed the speakers: Phil Atkinson-Koki, Angus Westwater SMART's component expert, Jim Ramage-Pace Europe, Dennis Price-Merlin Circuits, Peter Grundy-Feinfocus, Steve Mainwaring-Solectron, Martin Tarr-Bolton Institute, Stewart McCracken-MCS. For details of SMART Group Scotland events contact: William Campbell 01700 811611 [wcampbell@egs-c.co.uk](mailto:wcampbell@egs-c.co.uk)

## Back by Public Demand - Pin In Hole Reflow

SMART Group were one of the first organisations to run workshops dedicated to Pin In Hole Intrusive Reflow and due to the many requests on *smart-e-link* we are running one again in December. The workshop will include some hands on sessions and cover the A - Z of introducing PIHR, or as some engineers call it, pin in paste, selective reflow, multi spot soldering the list is endless. If you want to see how it's done, hear from two of the greatest exponents of the technology in a no nonsense workshop join us on 7th December.



## BGA Inspection Criteria and Hands On Training

For the first time SMART Group have put together a Hands On BGA and Land Grid Array Inspection workshop to teach the techniques and the criteria for BGA inspection. The workshop on 26th January will include both x-ray and optical inspection and is an ideal way of having your staff trained on what is acceptable and not and how to recognise process defects like BGA warpage, Popcorning and much more. The session will illustrate criteria for tin/lead and lead-free joints and introduce the criteria in the latest IPC standards.



NEPCON WILL BE AT BRIGHTON FOR THE SMART GROUP EUROPEAN CONFERENCE AND ARE LOOKING FORWARD TO ANOTHER GREAT EVENT. NEPCON IS THE UK'S ONLY DEDICATED EXHIBITION FOR THE ELECTRONICS INDUSTRY. WE WILL BE AVAILABLE TO UPDATE YOU ON OUR BIGGER BETTER 2005 EVENT AND REGISTER YOU FOR FAST-TRACK PRE-REGISTRATION.