



30th Anniversary Conference & Exhibition

Reproduced Sound 2014

14–15 October 2014, NEC, Birmingham



TUESDAY 14 OCTOBER 2014

08.00 Registration

09.00 Welcome

09.15 KEYNOTE:
Developments in electroacoustics over the past 40 years

Peter Mapp, Peter Mapp Associates

10.15 Efficient compact representations of head related transfer functions

Joe Sinker, University of Salford

10.45 The psychoacoustic effects of stimuli plausibility on headphone externalisation

Bruna Fazenda, Jamie Newton, University of Salford

11.15 Coffee

11.45 Short time acoustical measurement using maximum entropy

Jamie Angus, University of Salford

12.15 Modelling loudspeaker cabinet diffraction

George Perkins, KEFAudio (UK)

12.45 The use of acoustic models as input to creative sound design in theatre and radio drama

Paul Malpas, Engineered Acoustic Design

13.15 Lunch

14.15 Subjective evaluation of an emerging theory of low-frequency sound-source localisation in closed acoustic space

Adam Hill, University of Derby, Malcolm Hawksford, University of Essex

14.45 Why is good speech intelligibility in Mosques a challenges?

Wolfgang Ahnert, Emad El-Saghir, ADA-AMC

15.15 The acoustic and intelligibility performance of assisted listening systems

Peter Mapp, Peter Mapp Associates

15.45 Tea

16.15 The history of active acoustic enhancement systems

Stuart Gillan, Soundscape Audio Consultancy, Scotland

16.45 Circular loudspeaker array for personalized audio

Mincheol Chin, Filippo Fazi, Philip Nelson, ISVR, Simone Fontana, Lang Yue, Huawei European Research Centre

17.15 Numerical comparison of sound field control strategies under free-field conditions for given performance constraints

Fernando Olivieri, Filippo Fazi, Philip Nelson, ISVR, Simone Fontana, Lang Yue, Huawei European Research Centre, Germany

17.45 How to see sound waves in motion

Richard Jockett, NPL

18.15 Close

19.00 Drinks Reception

The Pavilion Suite, Hilton Metropole Hotel

19.30 30th Anniversary Dinner

During and after the demonstrations delegates will have the opportunity to listen and experiment with the Yamaha AFC3 acoustic enhancement system. Musical instruments are encouraged.

Crowd enhancement in stadiums using electro-acoustic enhancement systems

Mattias Winther, Audile Electro-Acoustics, Stockholm, Sweden

Acoustic environments in stadiums worldwide are becoming less reverberant to support better speech intelligibility for voice alarm systems as well as to support the application of sound reinforcement systems for pop concerts. This trend has many benefits, but the downside is that the typical acoustics for a crowd to support their sports teams is disappearing, resulting in a 'duller' stadium. This presentation proposes the use of regenerative acoustic enhancement systems to be applied as 'crowd enhancement system' to restore optimal reverberant acoustics for sports events whilst keeping speech intelligibility for emergency announcements.

In-line vs regenerative acoustic enhancement systems

Ron Bakker, Yamaha Commercial Audio Europe, Hamburg, Germany

The market of acoustic enhancement system is divided in two approaches: the in-line and the regenerative approach. The in-line approach represses regeneration as much as possible to allow for a high degree of freedom in the design of the acoustic response, generating an enhancement from stage sources to audience listeners. The regenerative approach actively uses regeneration to include a room's original acoustic signature in the response, generating a natural response for the whole room - including both stage and audience areas. To demonstrate the difference, a hybrid regenerative system is temporarily installed in the seminar room, capable of generating both modes, allowing attendants to experience both concepts in real life.

Posters:

Setting the tone: considerations for educating the next generations of sound reproduction professionals

Paul Thompson, Benjamin Mosley, Leeds Metropolitan University

Investigating headphone driver modelling using the finite/ boundary element method

Kelvin Griffiths, Electroacoustic Design, Rowan Williams, Woox Innovations

Three dimensional tissue-conducted sound fields

Ian McKenzie, Peter Lennox, Bruce Wiggins, University of Derby

Passive pre-microphone acoustic filters with gain

Graham Bank, Deben Acoustics, Peter Cochrane, University of Hertfordshire

Res (Resonant String Shell), the design of an acoustic shell for outdoor chamber music concerts

Serafina Di Rosario, Buro Happold

WEDNESDAY 15 OCTOBER 2014

09.15 Welcome to 40th Anniversary

09.30 **KEYNOTE LECTURE:**
Concert hall design: new findings

Leo L. Beranek

10.30 Coffee

11.00 **PLENARY:**
The evolution of noise policy and noise management during the life of the IOA

Stephen Turner, Defra, Colin Grimwood, CJGEM

11.30 **Engineering Medal Lecture:**
Jet noise and its reduction

Dame Ann Dowling

12.00 Coffee

12.30 Profiling the distortion characteristics of commercial music using amplitude distribution statistics

Alex Wilson, Bruno Fazenda, University of Salford

12.50 How important is audio quality to usage of online recordings?

Trevor Cox, Bruno Fazenda, Iain Jackson, Paul Kendrick, Francis Li, University of Salford

13.10 Applications of the fast multipole boundary element method to the audio industry

Patrick Macey, PACSYS

13.30 Lunch

14.30 **Rayleigh Medal Lecture:**
Bubble acoustics: from whales to other worlds

Timothy G Leighton, ISVR, University of Southampton

15.00 **PLENARY:**
Sonic crystals, metasurfaces, acoustic invisibility and black holes

Keith Attenborough, Ho-Chul Shin, Imran Bashir and Shahram Teherzadeth, The Open University

16.00 **Intelligibility enhancement of speech in noise**

Cassia Valentini-Botinhao, University of Edinburgh

16.40 **Room response estimation using microphone averaging**

Philip Newell, Consultant, Spain, Keith Holland, ISVR, University of Southampton

17.00 **The audibility of comb-filtering due to cinema screens**

David Elliott, Keith Holland, ISVR, University of Southampton, Philip Newell, Consultant, Spain

17.20 **Peter Barnett Award:**
Audio, research and entropy: A 50+ year personal journey

Malcolm Hawksford, University of Essex

THE FULL PROGRAMME FOR THE 40TH ANNIVERSARY CONFERENCE IS AVAILABLE AT IOA.ORG.UK

OVERVIEW OF SESSIONS: WEDNESDAY 15 OCTOBER 2014

0915	WELCOME				
0930	KEYNOTE LECTURE: LEO BERANEK				
1030	COFFEE				
1100	PLENARY: STEPHEN TURNER				
1130	PLENARY: ENGINEERING MEDAL LECTURE: DAME ANN DOWLING				
1200	COFFEE				
	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5
1230	ENV	NVEG	PAG	MAG	EAG
1250	ENV	NVEG	PAG	MAG	EAG
1310	ENV	NVEG	PAG	MAG	EAG
1330	LUNCH				

1430	PLENARY: RAYLEIGH MEDAL LECTURE: TIMOTHY G LEIGHTON				
1500	PLENARY: KEITH ATTENBOROUGH				
1530	COFFEE				
	ROOM 1	ROOM 2	ROOM 3	ROOM 4	ROOM 5
1600	BAG	M&I	S+H	UAG	EAG
1620	BAG	M&I	S+H	UAG	EAG
1640	BAG	M&I	S+H	UAG	EAG
1700	BAG	M&I	S+H	UAG	EAG
1720	CLOSE				
1900	RECEPTION				
1930	40TH ANNIVERSARY DINNER				

KEY TO ABBREVIATIONS:

ENV	ENVIRONMENTAL NOISE	UAG	UNDERWATER ACOUSTICS	S+H	SPEECH & HEARING
BAG	BUILDING ACOUSTICS	PAG	PHYSICAL ACOUSTICS	MAG	MUSICAL ACOUSTICS
NVEG	NOISE & VIBRATION ENGINEERING	M&I	MEASUREMENT & INSTRUMENTATION	EAG	ELECTROACOUSTICS

REGISTRATION FORM

REPRODUCED SOUND 2014 – 14-15 OCTOBER 2014

Name:

Business:

Address:

Postcode: E-mail:

Telephone: Fax:

ONLINE REGISTRATION IS AVAILABLE AT: WWW.IOA.ORG.UK

All prices inclusive of VAT

Conference Fee: (Delegate fee for two days 14-15 October 2014, includes conference proceedings, refreshment and lunch on both days and conference dinner on Tuesday 14th October).

	(2 Days: 14-15th)	(3 Days: 14-16th)
Fee for Speakers (giving the presentation)	<input type="checkbox"/> £ 250.00	<input type="checkbox"/> £ 300.00
Fee for Members	<input type="checkbox"/> £ 440.00	<input type="checkbox"/> £ 500.00
Fee for Non-members	<input type="checkbox"/> £ 490.00	<input type="checkbox"/> £ 550.00
Sponsor Members	<input type="checkbox"/> £ 352.00	<input type="checkbox"/> £ 400.00

Retired Members and Students (in-full-time education) should use the day rates below to register

Day Rates: (includes conference proceedings, refreshments and lunch on the day indicated)

	Reproduced Sound	Reproduced Sound & 40th Anniversary	40th Anniversary	Rates (per day)
Members	<input type="checkbox"/> Tuesday 14th	<input type="checkbox"/> Wednesday 15th	<input type="checkbox"/> Thursday 16th	£250.00
Non Members	<input type="checkbox"/> Tuesday 14th	<input type="checkbox"/> Wednesday 15th	<input type="checkbox"/> Thursday 16th	£285.00
Students	<input type="checkbox"/> Tuesday 14th	<input type="checkbox"/> Wednesday 15th	<input type="checkbox"/> Thursday 16th	£ 40.00
Retired Members	<input type="checkbox"/> Tuesday 14th	<input type="checkbox"/> Wednesday 15th	<input type="checkbox"/> Thursday 16th	£ 40.00
Reproduced Sound Conference Dinner Tuesday 14 October 2014				<input type="checkbox"/> £ 60.00
40th Anniversary Dinner Wednesday 15 October 2014				<input type="checkbox"/> £ 60.00

Exhibition:

Exhibition is open 3 days from Tuesday 14 until Thursday 16 October 2014. Exhibition fee covers exhibition space and one person registered as a delegate, refreshments and lunch on three days. Additional exhibitors should register at member's rate. Conference Dinners should be booked separately.

- Exhibition fee (3 days) £ 900.00
- Other Exhibitors (members rate) £ 500.00
- IOA Sponsors £ 720.00

Accommodation: Accommodation has been reserved by VenueFixers at a number of Hotels, full details are available on the IOA website

- Proceedings:** I am unable to attend the conference. Please send me a copy of the Conference proceedings.
 Members £20.00 Non-Members £30.00

Payment instructions: (Online payment is available for this event)

Total: £

There are four ways to pay. Please indicate your chosen method: (CANCELLATIONS ARE PAYABLE IN FULL)

- 1. Cheques:** Payable to "Institute of Acoustics" (in £ Sterling drawn on UK bank account)
- 2. Direct to Bank:** BACS: Account No: 00375204 Sort Code: 30 94 81
Bank Transfer: SWIFT LOYDGB21024 IBAN GB27LOYD30948100375204
Bank Address: Lloyds TSB Knightsbridge Branch, PO Box 663, 79-81 Brompton Road, London SW1 1DD
*A copy of the instructions to the bank should be attached with the registration form.
Please quote 'RS' and the name of the delegate registered.*

3. Invoice: Please supply purchase order number:

- 4. Credit Card/Debit Card:** I enclose credit card details for the full amount: VISA, DELTA, MASTERCARD, MAESTRO, ELECTRON
Card Number:
Card Expiry Date: / Security Code: *last 3 digits on back of card*
Maestro only: Issue No. or Valid from: /

Card holders name: (if different from above)

Card holders address:

Postcode: