



Acoustic Feedback

November 2010

Below is an outline of recent and upcoming Western Australia State Division activities.

Upcoming Events and Notices

AAS Christmas Party 12pm, December 3, 2010

Members and partners are invited to join us for our annual Christmas lunch - this year it will be an 'under verandah style' lunchtime event on December 3, 12pm onwards, at the [Balmoral Hotel](#), 901 Albany Highway, East Victoria Park.

The Society is covering food expenses and it will be a great opportunity to catch up after a busy year.

Online location map is located [here](#).

To assist in our planning, please advise Luke via l.zoontjens@ndy.com if you wish to attend.

AAS AGM, December 7, 2010

The 40th Annual General Meeting of the Australian Acoustical Society will be held in Melbourne on Tuesday 7th December 2010 at 7:00pm.

All members receiving email correspondence should have received the agenda and a proforma for raising queries with the Federal Council.

The Financial Statement with the Council Report to the AGM for the year ending 30 June 2010, along with the previous AGM minutes, will be available from the Society website at www.acoustics.asn.au.

2010 AAS WA Tertiary Prize in Acoustics and Vibration – Entries Close Nov 30th

The WA Division of the Australian Acoustical Society is pleased to call for entries for the 2010 AAS WA Tertiary Prize in Acoustics and Vibration. Undergraduate, honours, masters by course work and graduate diploma students are all eligible to enter. This is a cash prize of \$1,000 for the best student project in any field of acoustics and/or vibration completed at a Western Australian tertiary institution in 2010. The prize has been set up to encourage tertiary students to undertake projects in this interesting and challenging field, and we expect to award it annually. Acoustics is such a broad field that projects in many different disciplines are eligible.

Topics may include, but are not limited to:

- architectural and building acoustics
- underwater acoustics,
- musical acoustics
- biological acoustics
- noise and vibration control
- vibration and structural dynamics
- environmental noise
- industrial noise
- occupational health
- hearing and speech physiology
- ultrasonics

Entries Close 5pm 30th November 2010.

For details see the "Grants, Prizes and Awards" link on the Australian Acoustical Society's web site:



www.acoustics.asn.au/joomla/

Any questions regarding the prize should be directed to the WA Division Secretary.

Summary of Recent Events

AAS WA AGM 2010

The AAS WA Division held its AGM on October 20, minutes of which are attached. Mr Brad Walsh presented to attendees an interesting technical talk on his study of blade interaction noise of the micro-UAV *Mupod*.

Following the talk, he was presented with the inaugural 2009 AAS WA Tertiary Prize in Acoustics and Vibration.



Brad Walsh receives the 2009 AAS WA Tertiary Prize in Acoustics and Vibration

ICA Travel Grant Recipients

Ye Lei, Yanni Zhang, Wei Liu (University of Western Australia) were recent winners of the AAS WA Travel Grant to help support the costs of their travel to Sydney to present papers at the ICA 2010 conference. Their abstracts are below.

(1) Ms. Ye Lei, "Noise reduction of an acoustical enclosure --- Mechanisms and prediction accuracy"
Abstract: Noise reduction (NR) of an acoustical enclosure with flexible boundary walls has been predicted using the Statistical Energy Analysis (SEA) method by several authors. Although it is useful for a rough NR estimation, a large discrepancy often exists between the predicted and measured NR levels. Moreover, some physical mechanisms which may affect NR prediction were not addressed in the existing SEA models. The sources of the discrepancy were identified by investigating the limitation of SEA for system energy transfer in the entire frequency range of noise transmission, and the effect of enclosure wall coupling and sound-structural coupling on the NR and its prediction accuracy. This paper presents a modified SEA model, which includes the non-resonant response and more accurate transmission coefficient of finite panels, and compares the model prediction with experimental results. A reasonable agreement between the prediction and experiment was observed.

(2) Ms. Yanni Zhang, "Underwater sound radiation by a layered infinite elastic plate with discontinuity"
Abstract: Underwater sound radiation from layered structure is determined by propagation and scattering properties of elastic waves in the structure and by structural/fluid interaction. In this paper, a model of a layered infinite plate is used to address how such properties and interaction influence the

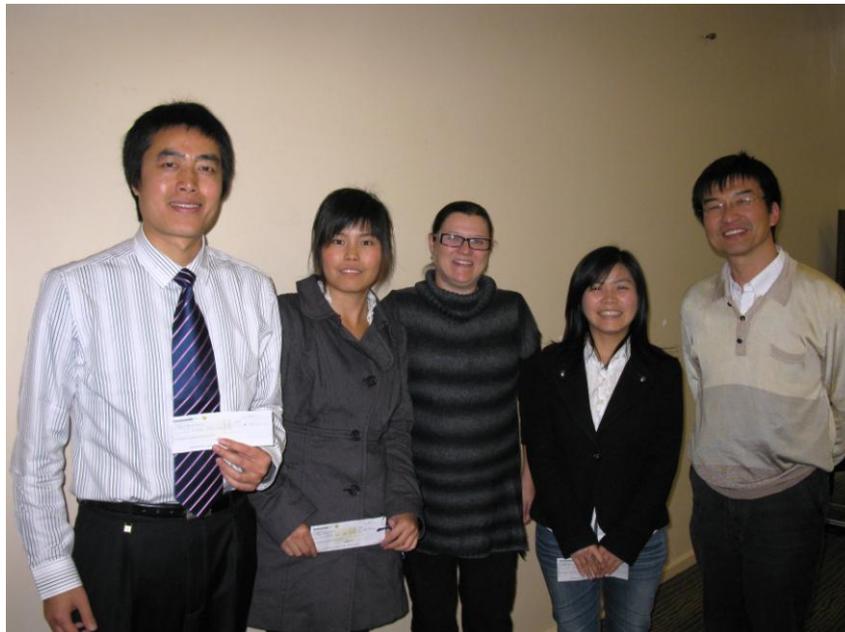


near field and far field characteristics of the radiated sound. In particular, the effect of structural discontinuity, such as the presence of ribs or signal conditioning plate, on the sound radiation is investigated.

The system model is described analytically, so that physical mechanisms controlling the sound radiation are readily illustrated by mathematical expressions and numerical plots.

(3) Mr. Wei Liu, "Measurement of sound-radiation from a torpedo-shaped cylindrical structure subjected to axial excitation".

Abstract: This paper summarizes the first part of measurement results of underwater sound radiation from a torpedo-shaped cylindrical structure under axial excitation. In this study, a two meters long torpedo shaped structure has been built, which consists of a cylindrical shell, a semi-spherical shell at one end and a conical shell at the other end. Due to the boundary conditions imposed by the semi-sphere and the cone to the ends of the cylinder, the torpedo shaped cylindrical structure exhibits noticeable different dynamic behaviour from that of shear-diaphragm supported close-end cylinder. This paper studied the first 13 structural modes experimentally. Based on that, the study then concentrates on the corresponding sound radiation from the structure under each of these vibration modes. The purpose of this experimental work is to verify and support the existing analytical and numerical prediction of underwater sound radiation from a submarine hull.



Prof Jie Pan (right), Rebecca Donovan (centre), with AAS WA Travel Grant winners Ye Lei, Yanni Zhang and Wei Liu

Formalities

Chairman's Report 2010

It's time once again to reflect on the year past and discuss the state of our Western Australian Division.

An advertised aim of this Society is to promote and advance the science and practice of acoustics. Locally we held several notable technical presentations throughout the year; awarded the 2009 AAS WA Undergraduate Prize; and sponsored students to attend the ICA 2010 conference in July.

Meanwhile, our Division membership has grown to 57, up from 49 at this time last year. We welcome our new members, and encourage all to participate and take the opportunities on offer.



Remember that time is running out with entries for the 2010 AAS WA Undergraduate Prize due on the 30th of November. The \$1,000 prize is designed to encourage more students to undertake project work in noise and vibration as part of their studies, and the presentation at the 2010 AGM by previous award recipients indicated the high quality of work being produced.

I'll take this opportunity to mention that there are grants and awards out there not just for students and researchers. You will find that on the AAS website, under the section 'Awards, Prizes and Grants', there are broad opportunities certainly worth the effort in applying for. The cash amounts are not insignificant; they include the \$2,500 *Excellence in Acoustics Award*, through to the \$5,000+ *AAS Education Grant*.

I'd like to thank the members of the Divisional committee for their efforts over the last 12 months: Norbert Gabriels, Alec Duncan, Murray Limb, Terrance McMinn, Kingsley Hearne, Neil Butt, and Sasha Gavrilov. We also welcome Ben Farrell to the Committee.

With the recent arrival of her baby daughter, it is no surprise Rebecca Donovan has stepped down to support her family. On behalf of the committee, I especially thank Rebecca for her leadership and contribution to the Society as Chair over the recent years.

As always I welcome your feedback and suggestions.

- Luke Zoontjens (l.zoontjens@ndy.com)

Your serving members in 2010 - 2011

Luke Zoontjens; Alec Duncan; Terrance McMinn; Rebecca Donovan, Murray Limb; Kingsley Hearne; Alexander Gavrilov; Neil Butt; Norbert Gabriels; Ben Farrell.

Chairman:	L Zoontjens
Vice Chairman:	A Duncan
Treasurer:	N. Butt
Secretary:	N Gabriels
Registrar	T McMinn
AAS Reporter	M. Limb
Membership Grading	Whole Committee
Federal Councillors	T McMinn L Zoontjens