



AUSTRALASIAN  
FLUID  
MECHANICS  
SOCIETY

## **NEWSLETTER – No. 8**

**October 2015**

Welcome to the eighth newsletter of the Australasian Fluid Mechanics Society. The AFMS welcomes its new president Hugh Blackburn who was elected at the annual general meeting in December 2014. The AFMS acknowledges the many contributions to the society, made through his leadership, of the outgoing president Richard Manasseh having served his full term. Further details of the new executive committee and council of the Society elected at the 2014 AGM are recorded below. The Executive Committee of the Society has met three times this year, with a fourth meeting scheduled for later in the year.

## **NEWS**

### **Vale Peter Joubert**

It is with great sadness that we advise you of the death of Professor Emeritus Peter Joubert, an inaugural Fellow of the AFMS. Peter passed away in July at the age of 90 and leaves a great legacy with his many contributions that have helped shape fluid mechanics and engineering in Australia.

A fitting obituary published by the ATSE can be found on Page 40 at:  
<http://www.atse.org.au/Documents/focus/192-advanced-manufacturing.pdf>

### **19AFMC**

The 19<sup>th</sup> Australasian Fluid Mechanics Conference hosted by RMIT University in Melbourne was took place on the 8<sup>th</sup>-11<sup>th</sup> December 2014. The conference drew the largest participation in the history of the conference series with 380 papers presented by registered 370 delegates of whom approximately 52% were research students. The delegates represented 21 nations including Australia, Japan, UK, France, Singapore, USA, Germany, Saudi Arabia, Canada, China, United Arab Emirates, New Zealand, Italy, Thailand, Oman, Malaysia, Spain, Russia, India, Czech Republic and Bangladesh. Eight keynote

speakers from the world's top universities and research organisations gave their presentations. Accordingly the conference represented an outstanding occasion for the Australasian Fluid Mechanics community to come together to communicate new ideas and advances, network and, in many cases, catch up with colleagues and friends. The local organising committee was led by Firoz Alam, ably assisted by Harun Chowdhury.



Firoz Alam hosting the 19AFMC banquet

The papers presented at the conference are published at:  
<http://people.eng.unimelb.edu.au/imarusic/proceedings/19%20AFMC%20TOC.htm>

### **New Fellows of the AFMS**

Six new fellows of the AFMS were appointed in 2014; fellowship certificates were presented by Richard Manasseh, 2012-2014 President of the AFMS at the banquet of the 19AFMC in December 2014.



**Min Seong Chong**



**Graham De Vahl Davis**



**Ivan Marusic**



**Arved Jaan Raudkivi**



**Julio Soria**



**Yu Zhou**

### **Student-presentation prize winners at 19AFMS**

The 19AFMC saw the introduction of student-presentation prizes that were judged by members of the AMFS committee and senior participants in the conference. The assessment criteria were a combination of presentation content, oral exposition and use of visual aids. Three prizes, named after eminent Australasian Fluid Mechanics were awarded as follows.

**Jun Hoon Lee** receives the  
**Sam Luxton prize**

for his presentation 'Time resolved PIV measurements of a developing zero pressure gradient turbulent boundary layer'

The prize was awarded by **Gus Nathan**.



**William Sidebottom** receives the  
**Tony Perry prize**

for his presentation 'Modelling of wall shear-stress fluctuations for large-eddy simulations'

The prize was awarded by **Lex Smits**.



**Dhiren Mistry** receives the  
**David Wilkinson prize**

for his presentation 'Experimental investigation of entrainment processes of a turbulent jet'

The prize was awarded by **Hubert Chanson**.



## ANNOUNCEMENTS

### 20 AFMC in 2016

At the 2014 AGM of the Society the winning bid to host the 20th Australasian Fluid Mechanics Conference was from Perth where the conference will be hosted by the University of Western Australia and chaired by Greg Ivey.



Greg Ivey welcomes AFMC participants to the 20AFMC to be held in Perth

The conference is to be held on the UWA campus from Sunday, December 4 to Thursday, December 8, 2016. UWA's University Club will be the central venue, with many sessions to be held in the University's nearby lecture theatres.

Conference sessions will cover a wide range of topics in fluid mechanics, across a range of disciplines. This diversity of topics is reflected in the invited speakers. The Batchelor lecture will be delivered by **Paul Linden (Cambridge)**, who will speak on "**New developments in the understanding of stratified turbulence**". To date, other confirmed invited speakers and tentative lecture titles include:

- Roman Stocker (ETH): The fluid mechanics of plankton
- Charles Williamson (Cornell): TBA
- Nick Hutchins (Melbourne): TBA
- Leslie Yeo (RMIT): Microscale fluid-structure interaction: something old, something new, and something unexpected
- Robert Dalrymple (Johns Hopkins): Breaking waves in the surf zone

In addition to the main program, the conference will feature (i) short courses available to all AFMC attendees, and (ii) exhibition booths for vendors of fluid mechanics instrumentation (numerical, laboratory & field tools) and industry sponsors.

## **Election of AFMS committee members**

At the 2014 AGM the executive committee and council members elected were as follows:

Hugh Blackburn (President)	(Monash University)
Richard Manasseh (Vice-president)	(Swinburne University)
Tony Lucey (Secretary)	(Curtin University)
Ivan Marusic (Treasurer)	(Melbourne University)
Steve Armfield	(University of Sydney)
Tracie Barber	(UNSW)
Paul Brandner	(University of Tasmania)
Bianca Capra	(Queensland University)
Jim Denier	(Auckland University)
Yuqing Feng	(CSIRO)
Greg Ivey	(University of Western Australia)
Richard Kelso	(Adelaide University)
Chengwang Lei	(University of Sydney)
Wenxian Lin	(James Cook University)
Roger Nokes	(University of Canterbury)
Julio Soria	(Monash University)
Yonggang Zhu	(CSIRO)

## **Subcommittees**

To improve progress on a number of matters and implement important initiatives undertaken by the Society, a number of subcommittees have been formed over the course of 2014. These are as follow.

### ***Student prizes***

Wenxian Lin (Chair)  
Tony Lucey  
Richard Kelso

### ***ARC College***

Steve Armfield (Chair)  
Tony Lucey  
Ivan Marusic

### ***Fellowships***

Richard Manasseh (Chair)  
Hugh Blackburn  
David Boger  
Lex Smits

### ***Future AFMCs***

Hugh Blackburn (Chair)  
Richard Manasseh (Chair)  
Roger Nokes  
Julio Soria

**Winter School**

Richard Manasseh (Chair)  
Richard Kelso  
Jim Denier

**Regional Branches**

Jim Denier (Chair)  
Bianca Capra  
Tony Lucey

**Local non-AFMS conference support**

Jim Denier (Chair)  
Bianca Capra  
Richard Manasseh  
Julio Soria

**AFMS Policies**

The outcomes of initiatives pursued by the sub-committees listed above are now being captured through the development of policies to ensure clarity and uniformity of processes and procedures within the Society. Once accepted by the Executive Committee of the Society, the policy documents are being made available to the Society's membership via a repository; the start of this development can be found at [the Society's webpage](#).

**International Symposia being held in Australia in 2015**

***CFD2015 – organised by CSIRO***

***11<sup>th</sup> International Conference on CFD in the Minerals and Process Industries (chaired by Dr Peter Witt)***

This will be held in Melbourne, Australia, 7-9 December 2015. The conference will mainly address CFD modelling of multiphase flows with a focus on industrial applications.

Confirmed keynote speakers are:

- Prof. Huilin Lu, Harbin Institute of Technology, China
- Prof. David Keyes, King Abdullah Uni. of Sci. & Tech. (KAUST), Saudi Arabia
- Prof. John Lowengrub, Department of Mathematics, Uni. of California, USA
- Dr. Ingo Eick, Hydro Aluminium, Germany
- Dr. Mohan Srinivas, ANSYS Inc., India.

Please see the conference website at <http://www.cfd.com.au/cfdconf>

***7th Australian Conference on Laser Diagnostics in Fluid Mechanics and Combustion  
(chaired by Prof Damon Honnery)***

This will be held at The Woodward Centre at the University of Melbourne. The conference is being run from Wednesday 9th to Friday 11th of December, 2015.

This conference is concerned with the development and application of laser and optical diagnostic techniques to fluid mechanics and combustion, both individually and in combination with other techniques. A strong focus of the conference is the participation of research students and ECRs, who are encouraged to attend and present.

The conference will directly follow the 2015 Australian Combustion Symposium, which will be held in the same venue from 6-9th December. Attendees are encouraged to take up the opportunity to attend both conferences over the week long period as they provide an outstanding opportunity to catch up with colleagues and students, and to hear the latest developments taking place in Australia and internationally.

Please see the conference website at <http://aldc.eng.monash.edu/>

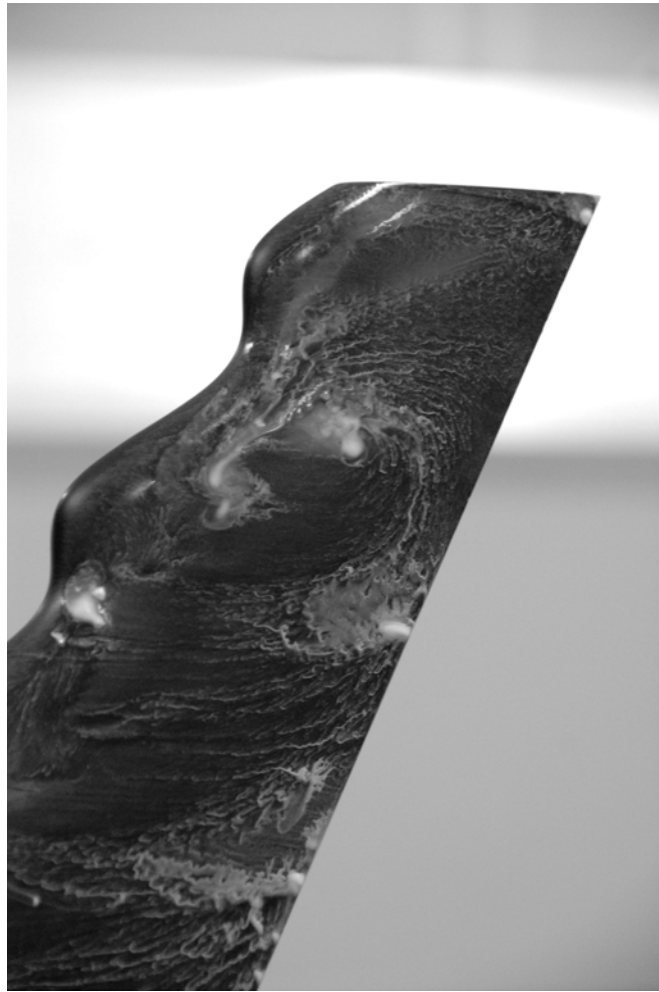
**ENDPIECE**

If you would like to contribute an item for inclusion in a following newsletter, then please contact the secretary of the AFMS at [a.lucey@curtin.edu.au](mailto:a.lucey@curtin.edu.au)

The Society's website can be found at: <http://www.afms.org.au>

This newsletter's fluid-mechanics image (next page) is provided by Michael Bolzon, PhD student (supervised by Richard Kelso and Maziar Arjomandi) at the University of Adelaide. **More submissions are requested for future editions of the newsletter and for the AFMS gallery.**





Oil film flow visualisation of tubercled, swept wing at a Reynolds number of 220,000 based on Mean Aerodynamic Chord. Flow is from left to right. Talcum powder and oil were painted on the foil surface, revealing the surface streak pattern. The image shows that the flow behind the outboard trough has undergone complete stall, but the inboard progression of the separation zone is limited by the presence of the tubercles. Although the flow behind the tubercle peaks remain attached, the accumulation of powder at the trailing edge behind the troughs demonstrates that these zones undergo separation at a lower angle of attack than a similar wing without tubercles.