



THE COMBUSTION INSTITUTE

(British Section)

www.combustion.org.uk

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ANNUAL GENERAL MEETING - MINUTES

13.30 24th of September 2014
Imperial College London

The meeting was chaired by Prof Bill Jones. 25 members were present.

1. Apologies for Absence

Apologies received from K. Hughes, Y. Wu, N. Mastorakos, and S Cant.

2. Minutes of the AGM, 24 Sept 2013 University of Loughborough

The minutes were accepted.

3. Matters arising

No matters arising.

4. Reports

4.1 Chairman's report

The Chairman, Prof Bill Jones, indicated that this was another successful year for the Section and membership levels remained constant. A successful two day joint meeting with Scandinavian-Nordic Section was organised in May 2014. Travel grants awarded for the Combustion Symposium despite some delays in delivering them. He reported the new procedure for the appointment of members of the Board of Directors of Combustion Institute and the associated election process. This required individual members to register with the Pittsburgh Office and unfortunately, only 30 members from the British Section registered to vote. Stewart Cant was nominated by the British Section Committee but not elected. Stewart was thanked for agreeing to stand. The chairman also thanked Guillermo Rein for his contribution to the committee, during his six years of office.

4.2 Secretaries' report (see Annex A)

The Secretary reported on the year's meetings, awards and new members of the committee. Two nominations were received for two available positions on the committee. Therefore, no election was required and Neal Morgan and Ghenadie Bulat will join the committee.

4.3 Membership secretary report (see Annex B)

The Membership secretary, Dr Kevin Hughes, provided a report on the current status of the membership. Although the numbers are slightly lower than previous years, there is no problem. More industrial members are desirable. Kevin was unable to attend the AGM.

4.4 Treasure's report (see Annex C)

The Treasurer, Neil Morgan, reported that the finances of the British section are extremely healthy. For 2013, there has been a small reduction due to low interest rates, although there should be no problems in providing future travel grants to attend Combustion meetings. Twenty-two travel grants were awarded to attend the Combustion Symposium in San Francisco at a cost of £9,900. The committee will discuss alternative options for more profitable investment of the available funds at the next committee meeting.

5. Hinshelwood and Sugden Prizes (see Annex A – section A.2.)

The 2013 Hinshelwood Prize for meritorious work by a younger member of the Section was awarded to Dr Edward S. Richardson, Associate Professor at the University of Southampton. The panel awarding the prize was chaired by Stewart Cant with assistance from Bill Jones and Neal Morgan.

The Sugden Prize for the best paper by a UK contributor during 2013 was awarded to a paper co-authored by *Chrystie R.S.M., Burns I.S. and Kaminski C.F.* "Temperature response of an acoustically-forced turbulent lean premixed flame: A quantitative experimental determination", published in *Combustion Science & Technology, Vol. 185, pages 180-199, (2013)*. The Sugden Panel was chaired by Guillermo Rein with assistance from Nondas Mastorakos and Yajue Wu.

6. Nominations for committee membership (see Annex D)

The AGM approved Neal Morgan and Ghenadie Bulat as new members of the committee. Their CVs are attached below.

7. Combustion Symposium bid for 2018 – update

The chairman reported that the London bid to host the 2018 Symposium on Combustion was not successful and that the 2018 Symposium had been awarded to Dublin. The chairman thanked all those that helped. It is believed that there is a strong feeling amongst the Board of Directors that future Combustion Symposia should be organised in Conference Centres rather

than Academic Institutions. Peter Lindstedt thanked Bill for his efforts in organising the bid.

8. Any other business

The electronic distribution of the Newsletter was discussed and will be discussed further at the next committee meeting. If adopted paper copies will be circulated when requested. The chairman requested feedback.

Annex A – Secretaries' Report

A.1. Technical Meetings of the CIBS

Autumn Meeting 2013: The section supported the Young Researchers meeting organized by the Institute of Physics, Combustion Physics Group. This took place at the University of Loughborough on 24 September 2013 and awarded the Felix Weinberg award to the best presentation by a young researcher.

Spring Meeting 2014: This coincided with the joint Scandinavian / British section meeting. The meeting was jointly organized. It was held at Robinson College in Cambridge on 27-28 March 2014 with Profs Mastorakos and Swaminathan being the local organizers.

A.2. Awards (item 5 on AGM agenda)

Travel Grants

Travel grants of £450 were awarded to eligible members travelling to the International Symposium on Combustion in San Francisco, as listed in Table 1.

Hinshelwood Prize 2013

The Hinshelwood Prize 2013 has been awarded to Dr Edward S. Richardson, Associate Professor at the University of Southampton, for outstanding work in computational analysis of two-phase reacting flows. The committee was chaired by Stewart Cant with assistance from Bill Jones and Neal Morgan.

Sugden Prize 2013

The Sugden Prize for the best paper by a UK contributor during 2013 has been awarded to a paper co-authored by *Chrystie R.S.M., Burns I.S. and Kaminski C.F.* "Temperature response of an acoustically-forced turbulent lean premixed flame: A quantitative experimental determination", published in *Combustion Science & Technology, Vol. 185, pages 180-199, (2013)*. The committee was chaired by Guillermo Rein with assistance from Nondas Mastorakos and Yajue Wu.

Name	Affiliation	Paper title
Yi Gao	University of Cambridge	Development of Temperature Evaluation of Pure Rotational Coherent Anti-Stokes Raman Scattering (RCARS) Spectra Influenced by Spatial Averaging Effects
Jun Xia	Brunel University	Droplet/ligament modulation of local small-scale turbulence and scalar mixing in a dense fuel spray
Kai Luo	UCL	Simultaneous Planar and Volume Cross-LIF Imaging to Identify Out-of-Plane Motion
Yangkyun Kim	University of Ulster	Numerical modelling of melting and dripping process of polymeric material subjected to moving heat flux: Prediction of drop time
Dongwon Noh	Imperial College	LES of a Methanol Spray Flame with a Stochastic Sub-grid Model
Alexander Snegirev	Saint-Petersburg Polytechnic University	Treatment of local extinction in CFD fire modeling
Xinyan Huang	Imperial College	Computational Smouldering Combustion: Predicting the Roles of Moisture and Inert Contents in Peat Wildfires
Dongping Chen	University of Cambridge	Surface reactivity of polycyclic aromatic hydrocarbon Clusters
Sebastian Mosbach	University of Cambridge	Influence of experimental observations on n-propylbenzene kinetic parameter estimates
Muhammad Mustafa Kamal	University of Cambridge	Favre- and Reynolds-averaged velocity measurements: interpreting PIV and LDA measurements in combustion
Andy Aspden	Cranfield University	Turbulence-Chemistry Interaction in Lean Premixed Hydrogen Flames
Rama Balachandran	UCL	Reaction zone visualisation in swirling spray n-heptane flames
Edirin Agbro	University of Leeds	Uncertainty propagation and global sensitivity analysis for evaluation of mechanisms describing low temperature DME oxidation
Andy Garmory	Loughborough University	Numerical Simulation of Oxy-Fuel Jet Flames Using Unstructured LES-CMC
Jenni Sidey	University of Cambridge	Visualization of MILD combustion from jets in cross-flow
Nondas Mastorakos	University of Cambridge	Large eddy simulation/conditional moment closure modelling of swirl-stabilized non-premixed flames with local extinction
J. Kariuki	University of Cambridge	Heat release imaging in turbulent premixed methane-air flames close to blow-off
Michalis A. Hadjipanayis	Imperial College	Time-resolved temperature measurements for inert and reactive particles in explosive atmospheres
Saravanan Balusamy	University of Cambridge	Nonlinear dynamics of a self-excited thermo acoustic system subjected to acoustic forcing
Alison S. Tomlin	University of Leeds	Determining predictive uncertainties and global sensitivities for large parameter systems: a case study for n-butane

Zhiyi Han	University of Cambridge	The response of stratified swirling flames to acoustic forcing: experiments and comparison to model
Yang Zhang	University of Sheffield	Oscillating flames in open tubes

Table 1. Awards for International Symposium on Combustion presentations.

A.3. Committee Membership [item 6 on AGM agenda]

Nominations for the committee have been made for the two positions available, replacing Neal Morgan and Simone Hochgreb. Two candidates have been nominated. Neal Morgan (Shell Global Solutions), nominated by Bill Jones and seconded by Yannis Hardalupas and Alex Taylor, and Ghenadie Bulat (Siemens Industrial Turbomachinery Ltd.), nominated by Bill Jones and seconded by Peter Lindstedt and Stewart Cant. Since only 2 candidates were nominated for 2 positions, there was no need to have elections. The AGM must approve committee membership. The proposed composition of the committee from 24 September 2014 will be as indicated on Table 2.

Name	Affiliation	Term
Prof. P. Bowen	Cardiff University	(2013-2016)
Dr. Ghenadie Bulat	Siemens Industrial Turbomachinery Ltd.	(2014-2017)
Prof. R. S. Cant	University of Cambridge	(2012-2015)
Prof. Y. Hardalupas	Imperial College	Hon. Secretary; (2009 – 2012), (2012 – 2015)
Prof. S. Hochgreb	University of Cambridge	<i>Newsletter editor</i> , (2003 – 2009), <i>co-opted</i> (2010 – 2017)
Dr. K. J. Hughes	Leeds University	Membership secretary; co-opted (2015)
Prof. W. P. Jones	Imperial College	Chair; (2012-2018)
Prof. R. P. Lindstedt		Director, Combustion Institute (co-opted)
Prof. E. Mastorakos	University of Cambridge	Associate Editor of C&F (co-opted)
Mr. J. Moran	Rolls-Royce plc	(2012-2015)
Dr. N. Morgan	Shell Global Solutions	Treasurer; (2011-2014), (2014-2017)
Dr G. Rein	Imperial College	Web Master; (2008-2011), (2011-2014), <i>co-opted</i> (2014-2015)
Dr Y. Wu	University of Sheffield	(2013-1016)

Table 2. Committee Members, CIBS, starting September 2014

Annex B - Membership secretary's report

Assuming all outstanding standing orders are paid, currently there are 225 members, four more than at the corresponding point last year. A detailed breakdown is as follows:

	Number	Change since 2013 AGM
Academics	91	+6
Retd.		
Academics	17	-2
Students	68	-2
non-Academics	42	+3
Retd. Non-		
Academics	7	-1
Total Academics	176	+2
Total Others	49	+2
Total Membership	225	

114 members pay by standing order, the others pay by cheque or direct internet banking payment. 6 renewal requests have been sent out during the year, 30 members from 2013 did not respond.

For longer term information on membership trends, a detailed breakdown since 2000 is given in the following table. From past experience, I project that the end of year total will be about 230.

Date	retired Others	retired Academics	Students	Others	Academics	Total
2000	20	7	30	75	87	219
2001	21	9	15	81	68	194
2002	19	10	23	60	73	185
2003	16	13	30	54	81	194
2004	9	18	34	52	80	193
2005	9	18	47	46	94	214
2006	8	22	57	45	98	230
2007	6	23	65	47	95	236
2008	6	21	72	53	97	249
2009	9	24	70	51	101	255
2010	9	25	82	47	96	259
2011	8	23	78	43	94	246
2012	8	19	77	41	91	236
2013	8	19	68	42	89	226
2014*	7	17	68	42	91	225

* - As of 22/9/14

Annex C - Treasurer's report

C.1. 2013 Overview

The results presented here today have been audited by Mike Davies and found to be correct.

During 2013, the accumulated funds fell slightly by £2,600 to stand at year-end at approximately £125.5K.

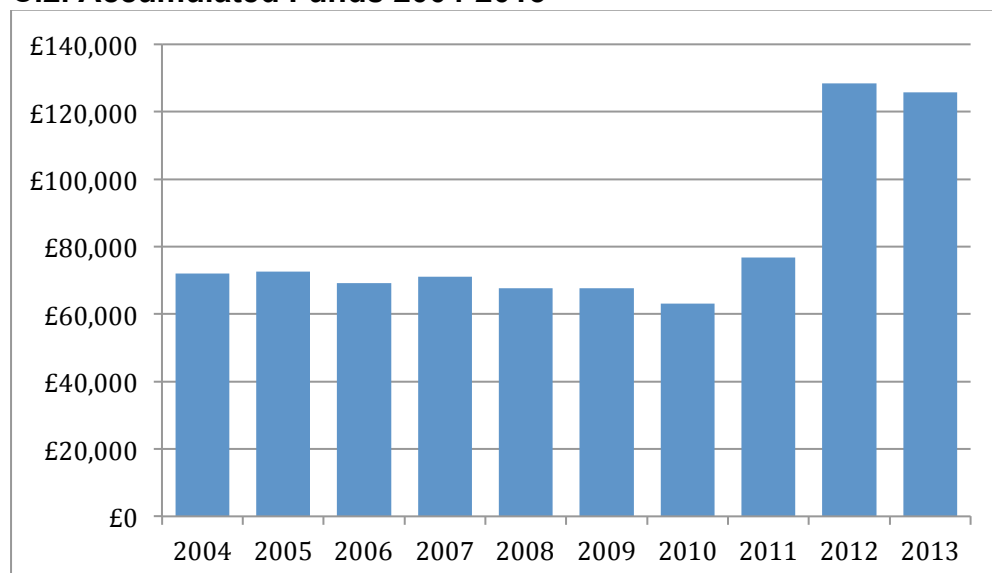
Normal expenses (committee, secretarial, newsletter, prizes) accounted for approximately £2400, which is significantly lower than 2012.

Travel grants totalling £4,750 were paid in 2013 to allow travel to the European Combustion Symposium in Lund - 19 recipients each received a grant of £250.

Membership subscriptions accounted for £5357 of income (slightly down on 2012). Investment income of £297.67 in 2013 was disappointing but was indicative of the low interest rates available this year.

The overall trend of the Accumulated funds for the CIBS are shown below.

C.2. Accumulated Funds 2004-2013



C.3. 2014 Status and Outlook

The finances of the British section are extremely healthy but are drawing down slightly after the Symposium travel grants and payments for the Robinson College meeting have been taken into account. 22 grants totalling £9,900 were written.

Interest rates still remain low and a poor investment income is still to be expected for the coming years.

COMBUSTION INSTITUTE (BRITISH SECTION)

Statement of Income and Expenditure for the year ending 31 December 2013

	INCOME		EXPENDITURE	
	2012 £	2013 £	2012 £	2013 £
Membership subs	5776.00	5357.78	Colloquium expenses	0.00
Colloquium fees	52407.04	152.25	Secretarial expenses	0.00
Investment income			Committee expenses	2772.60
COIF Account	531.14	297.67	Newsletter	481.04
			Travel grants	3000.00
			Prizes	1400.00
			Surplus (Deficit)	50925.54
	=====	=====		=====
	58579.18	5807.70		58579.18
				5807.70

Subject to year to year variation because of the timing of receipts and payments at the year end.

Balance Sheet for the year ending 31 December 2013

	ASSETS		LIABILITIES	
	2012 £	2013 £	2012 £	2013 £
Lloyds Bank 0082488	67695.06	64704.00	Uncashed cheques	0.00
COIF 938290001C	60840.76	61138.43	Accumulated funds	128535.82
	=====	=====		(2471.97)
	128535.82	125842.43		=====
				125842.43

Annex D – Nominations and CVs of new members of the committee

Dr Ghenadie Bulat, Siemens Industrial Turbomachinery Ltd., Lincoln

Dr Ghenadie Bulat joined Siemens Industrial Turbomachinery, Lincoln in 2003 and presently holds the position of Group Leader Combustion Aero, a Chartered Engineer and the Member of Institution of Mechanical Engineers. In this role he is responsible for managing combustion projects and resource allocation for aero-thermal design, testing and support of new products and technologies of small Siemens gas turbines. His contribution is reflected in more than 15 patents on gas turbine combustion improvements. He obtained his PhD from Imperial College London, which considered the LES of reacting swirling flows in an industrial burner. In 2007 was awarded the British Flame Best Industrial Researcher Presentation by the Institute of Physics the and in 2013 the Siemens Silver Champions Award for responsible actions in re-commissioning the SGT-300 prior to Hurricane Sandy reaching Customer's site. Prior to Siemens, he was employed for a 20-months internship in the Combustion Technology Department, ALSTOM Switzerland.

Nominated by Prof Bill Jones. Seconded by Prof Stewart Cant and Prof Peter Lindstedt

DR NEAL MORGAN MA MEng (hons) PhD CEng MChemE

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CURRENT POSITION

October 2009–
Fuel Scientist. Shell Global Solutions, UK.

PREVIOUS POSITION

September 2006–September 2009
E.U. Marie Curie Research Fellow. Department of Chemical Engineering,
Cambridge & Shell Global Solutions, UK. Project Title: "Optimisation of Fuels for
Future Engine Technologies"

EDUCATION

PhD Chemical Engineering – Approved 20th May 2008, University of Cambridge
Thesis title: "Numerical Modelling of the Growth of Nanoparticles" Supervisor: Dr.
Markus Kraft
BA & MEng (hons): Chemical Engineering – June 2002, University of Cambridge

PUBLICATIONS

- "Mapping surrogate gasoline compositions into RON/MONspace" *Combustion and Flame*, 157, 1122-1131, 2010.
- "Simulating combustion of practical fuels and blends for modern engine applications using detailed chemical kinetics" *SAE Paper* 2010-01-0572
- "Modelling gas-phase synthesis of single-walled carbon nanotubes on iron catalyst particles" *Carbon*, 46 (3), 422-433, (2008)
- "Modes of Neck Growth in Nanoparticle Aggregates" *Combustion and Flame* 46(3): 422-433, 2008.

- “Numerical simulations of soot aggregation in premixed laminar flames” *Proceedings of the Combustion Institute* 31(1): 693-700, 2007.
- “A new numerical approach for the simulation of the growth of inorganic nanoparticles” *Journal of Computational Physics*. 211(2): 638-658, 2006.
- “Modelling Nanoparticle Dynamics: Coagulation, Sintering, Particle Inception and Surface Growth” *Combustion Theory and Modelling*. 9(3): 449-461, 2005.

AWARDS

- Gaydon award for most significant contribution from a UK paper to the International Symposium on Combustion (2006 Symposium)

Nominated by Bill Jones. Seconded by Prof Yannis Hardalupas and Prof Alex Taylor.