



OECC/ACOFT 2008 Workshops



The OECC / ACOFT 2008 program of regular and invited talks is complemented by four Workshops on key current issues in photonics:

- DCF, will it ever be displaced?
- Optical and electronic signal processing: matching the technology to the application
- Will POF be used in FTTH?
- High Q cavities: how much is enough?

These half-day Workshops are convened by leaders in the field and have panels of experts in these topics. They will involve presentations by the panel members, panel discussion and discussions driven by workshop participants.

The topics have been selected to address issues where there are some significant divergences of opinion and promise to provide lively discussion combined with insights into the critical issues involved.

Monday 7 July 08 - Workshops		
7.00am - 8.30am	Registrations	
8.30am - 10.00am	Optical and electronic signal processing: matching the technology to the application Convenors: Rod Tucker & Lars Thylen Room: Bayside 103	High Q cavities: how much is enough? Convenors: Snjezana Tomljenovic-Hanic & Michael Steel Room: Bayside 104
10.00am - 10.30am	Morning Tea	
10.30am - 12.00pm	Optical and electronic signal processing: matching the technology to the application Convenors: Rod Tucker & Lars Thylen Room: Bayside 103	High Q cavities: how much is enough? Convenors: Snjezana Tomljenovic-Hanic & Michael Steel Room: Bayside 104
12.00pm - 1.30pm	Lunch	
1.30pm - 3.00pm	DCF, Will It Ever Be Displaced Convenors: Paul Westbrook & Mark Englund Room: Bayside 103	Will POF be used in FTTH? Convenors: Maryanne Large & Yasuhiro Koike Room: Bayside 104
3.00pm - 3.30pm	Afternoon Tea	
3.30pm - 5.00pm	DCF, Will It Ever Be Displaced Convenors: Paul Westbrook & Mark Englund Room: Bayside 103	Will POF be used in FTTH? Convenors: Maryanne Large & Yasuhiro Koike Room: Bayside 104
6.00pm - 8.00pm	Welcome Reception <i>Bayside Gallery, Sydney Convention & Exhibition Centre</i>	

Optical and electronic signal processing: matching the technology to the application

Convenors: Rod Tucker, University of Melbourne
Lars Thylen, Royal Institute of Technology

Panellists: David Miller, Stanford University
Kerry Hinton, University of Melbourne
Ken-ichi Kitayama, Osaka University
Others tba

Ultra-high-speed nonlinear optical devices offer the potential for all-optical signal processing at terabit per second bit rates. Meanwhile, the high speed performance and low energy consumption of digital electronic circuits continue to improve. This workshop will explore the future roles of electronic and optical devices in high-speed digital signal processing applications. Topics to be covered include power and energy considerations in electronics and optics, processing speed, device integration issues, and intra-chip and inter-chip interconnects. Panelists will be leading figures from academia and industry and will provide insights into the future of optical and electronic signal processing. Audience participation will be encouraged.

DCF, will it ever be displaced?

Convenors: Paul Westbrook, OFS
Mark Englund, ROC

Panellists: tba

Dispersion is one of the most significant impairments in photonic systems. Several different technologies have been developed to counter it. These include Dispersion Compensating Fibre, Dispersion Compensating Gratings, other optical components and electronic compensation. DCF is well established; however other techniques have been gaining ground. Are these gains just in niche areas or is this a sign that ultimately DCF will be displaced, and if so which alternative technology will win? Experts from the various interested parties will provide their opinions on these matters and the attendees will be welcome to participate in what should be a lively debate.

High Q cavities: how much is enough?

Convenors:	Snjezana Tomljenovic-Hanic, Michael Steel,	University of Sydney Macquarie University
Panellists:	Gilberto Brambilla, Andrew Greentree, Michal Lipson, Barry Luther-Davies, Warwick Bowen,	University of Southampton University of Melbourne Cornell University Australian National University University of Otago

In the last few years, the study of optical nanocavities has attracted much attention. There are many possible device applications of compact and efficient nanocavities, such as channel drop filters, low-threshold lasers, cavity QED experiments, optical switching and optical sensing. The design aims for all these applications are to obtain a high quality factor with a small modal volume. In this workshop we will discuss why and how high Q cavities are needed for different applications. The panelists will be the world leading experts in the area.

Will POF be used in FTTH?

Convenors:	Maryanne Large, Yasuhiro Koike,	University of Sydney Keio University
Panellists:	Hans Poisel, Michael Stevens, Su-vun Chung, Others tba	POF ALL Consortium DiMoto Corning

Fibre to the home, or fibre to the premises (FTTH and FTTP), represents the biggest new deployment of optical fibre, and will revolutionise the way we communicate and obtain information. The social and economic consequences for this change will be immense. The deployment of the fibre however presents unique problems, especially when compared to long haul fibre installations. Each home, and each office is different, most will need to be retro-fitted. Fibre that is plugged into consumer devices potentially exposes the consumer to high intensity light that may not be visible, and connectorisation may need to be done by non-experts, without specialised equipment. In addition, there are the predictable trade-offs between speed and cost. A number of solutions have emerged to this challenge, including the use of polymer optical fibre, long considered the poor relation of silica, as well as a combination of silica fibre and wireless. Whilst many roll-outs are using standard G652 silica, polymer fibre has some unique benefits and vocal proponents. In this workshop we will consider whether polymer fibres are the solution to FTTH, and if they are, what kind of polymer optical fibre they will be.
