



Electromagnetic Crystal Structures

EuroConference on Electromagnetic Confinement - From Basic Research to the Marketplace

Supported by the European Commission, Research DG, Human Potential Programme
High-Level Scientific Conferences (Contract No: HPCF-CT-2000-00158)

St. Andrews, Scotland, 9-14 June 2001

Chairperson: **Thomas F. Krauss** (D, St. Andrews, UK)
Vice-Chairperson: **Claude Weisbuch** (F, Paris, F)

Programme

Saturday 9 June

Late afternoon / early evening	Registration at the hotel (New Hall) reception and ESF desk
19.00	DINNER
20.30	WELCOME RECEPTION

Sunday, 10 June

Session 1: Photonic crystal component and systems I

Chair: **Thomas Krauss** (D, St. Andrews, UK)

08.45	Welcome and opening remarks
09.00	William J. Stewart (UK, Caswell, UK) <i>Photonic crystal integrated optics - Motivation, requirements, systems and architectures</i>
10.00	Roel Baets (B, Ghent, B) <i>Guided wave photonic ICs</i>
11.00	Coffee break
11.30	Phillipe Lalanne (F, Orsay, F) <i>Adiabatic modal conversion for coupling in photonic crystal waveguides</i>
11.45	Anne Talneau (F, Bagneux, F) <i>Application of end-fire techniques to the measurement of PC-based guides and bends on InP substrates</i>

12.00 Discussion

12.30 Lunch

Session II: Photonic crystal component and systems II

Chair: **Chris Smith** (UK, Glasgow, UK)

14.00 **Henri Benisty** (F, Palaiseau, F)
Photonic crystal waveguides - physics and opportunities?

15:00 **Eli Yablonovitch** (US, Los Angeles, US)
Photonic crystal thin film integrated optics

15.20 **Shanhui Fan** (US, Stanford, US)
Guided modes in photonic crystal slab waveguides

15.40 **Vasily Astratov** (RU, Sheffield, UK)
External coupling properties of photonic crystal waveguides

15.55 Coffee break

16.20 **Ralf Wehrspohn** (D, Halle, D)
Porous silicon integrated optics – the opportunities

16.40 **Toshihiko Baba** (J, Hodogayaku, J)
Light propagation characteristics of microguides in photonic crystal slabs

17.00 **Kazuhiko Hosomi** (J, Kokubunji-Shi, J)
A dispersion compensator using coupled defects in a photonic crystal

17.15 **Manfred Eich** (D, Hamburg, D)
Polymer photonic crystal slab waveguides”

17.30 **Jelena Vuckovic** (YU, Pasadena, US)
Limits of quality factors of localized defect modes in planar photonic crystal structures

17.45 **Masaya Notomi** (J, Atsugi Kanagawa, J)
Si-based photonic crystals as guided-wave platforms

18.05 Discussion

19.00 Dinner

Monday, 11 June

Session III: Light sources - what next?

Chair: **Henri Benisty** (F, Palaiseau, F)

09.00 **Klaus Streubel** (D, Munich, D)
Photon engineering for light sources

10.00 **Michael Krames** (US, San Jose, US)
Novel geometries for LEDs

10.20 **Maxime Rattier** (F, Palaiseau, F)
Photonic crystal extractors

- 10.40 **Vincent Berger** (F, Orsay, F)
Integrated nonlinear quantum optics
- 11.00 Coffee break
- 11.30 **William Barnes** (UK, Exeter, UK)
Surface plasmons for novel light emitters
- 11.50 **Vladimir Shalaev** (US, Las Cruces, USA)
Metals and light – friend or foe?"
- 12.10 **Axel Scherer** (D, Pasadena, US)
Efficient light emitters based on periodic nanostructures
- 12.30 Discussion
- 13.00 Lunch
- 14.00 Free Time
- 16.00 Coffee break
- 16.30 **Costas Soukoulis** (EL, Heraklion, EL)
Tutorial A: Overview of computational methods

Session IV: Optical nanostructures: the key issues?

- 17.30 **Opening debate**
Chair: **Claude Weisbuch, Axel Scherer, Toshihiko Baba**
- 19.00 - 20.00 Dinner

Session V: Poster Session I

Tuesday 12 June

Session VI: 3D photonic crystals – optical wavelengths

Chair: **Eli Yablonovitch** (US, Los Angeles, US)

- 09.00 **Willem Vos** (NL, Amsterdam, NL)
Self-assembly of 3D photonic crystals and their optical properties
- 10.00 **Andrew Turberfield** (UK, Oxford, UK)
Holographic defined photonic crystals
- 10.20 **Albert Koenderink** (NL, Amsterdam, NL)
Internal light sources in inverse opals: strongly modified fluorescence
- 10.40 **Francisco Meseguer** (E, Valencia, E)
Semiconductor inverse opals: synthesis and optics
- 11.00 Coffee break

11.30	Susumu Noda (J, Kyoto, J) <i>Functional 2D and 3D photonic crystal structures</i>
11.50	Jim Fleming (US, Albuquerque, US) <i>Experimental realisation of metallic 3D photonic crystals at infrared wavelengths</i>
12.10	Shojiro Kawakami (J, Sendai, J) <i>Fabrication and applications of 3-D autocloned photonic crystals</i>
12.30	Discussion
13.00	Lunch
14.00	Excursion
19.30	Conference Dinner

Wednesday 13 June

Session VII: RF and microwave photonic crystals

Chair: **Costas Soukoulis** (EL, Heraklion, EL)

09.00	John Pendry (UK, London, UK) <i>Negative mu, negative epsilon, negative refractive index, and how to exploit them</i>
10.00	Ekmel Ozbay (TR, Ankara, TR) Cavities in 3-D photonic crystals
10.20	Jean-Michel Lourtioz (F, Orsay, F) <i>Photonic crystals in the microwave regime</i>
10.40	Michael Wiltshire (UK, Caswell, UK) <i>Swiss Rolls and Copper Stockings make negative materials</i>
10.55	Discussions
11.10	Coffee break
11.40	Doug Allan (US, Corning, US) <i>Industrial perspective on photonic crystals and photonic crystal fibres</i>
12.00	Wim Bogaerts (B, Ghent, B) <i>SOI Photonic crystal fabrication using deep UV lithography</i>
12.20	Discussion

Session VIII: Tutorials

14.00	Phillip Russell (UK, Bath, UK) Tutorial B: The beauty of wavevector diagrams
-------	---

15.00 –15.30

Kobus Kuipers (NL, Twente, NL)
**Tutorial C: The added value of SNOM for photonic
crystal characterisation**

Session IX: Poster session II

and 16.00: Coffee break

Session X: all things 3D – bright and beautiful?

17.30

Opening debate
**Eli Yablonovitch, Willem Vos, Shojiro Kawakami,
Costas Soukoulis**

19.00

Dinner

20.30

Continued discussion and review of conference series
Thomas Krauss, Claude Weisbuch

Thursday 14 June

Session XI: New Physics and Concepts

Chair : **Claude Weisbuch** (F, Palaiseau, F)

09.00

Jean-Michel Gerard (F, Bagneux, F)
*Quantum dots - a magic material for nanostructured
sources?*

10.00

Ping Sheng (US, Hong Kong, CN))
Metallic colloidal photonic crystals for optical wavelengths

10.20

Diederick Wiersma (NL, Florence, I)
A tunable random laser

10.35

Sylvain David (F, Paris-Sud, F)
Isotropic photonic structures with Archimedean-like tilings

10.50

Coffee break

11.20

Discussions and concluding remarks
Thomas Krauss

12.00

Lunch
Departure