PATENTS & APPLICATIONS

US patent 8303115: Method and system for retinal health management
A method for quantifying disease progression through retinal health assessment and management

US patent 681330: Method and apparatus for optical wavelength conversion
A method to provide wavelength adjustable sources from a single wavelength transmitter

US application 20020075935: Lateral optical pumping of vertical cavity surface emitting laser
A monolithic optically pumped VCSEL (vertical cavity surface emitting laser) architecture

US patent 6714574: Monolithically integrated optically-pumped edge-emitting semiconductor laser
A novel structure to substantially increase the power output of a high power semiconductor laser

US patent 5461225: Sampling Methods and Apparatus
A method of noise reduction: e.g. in electro-optic sampling systems; suitable for circuits which cannot be biased down for conventional lock-in processes.

US Patent 4661962: Phased linear laser array
A method of producing in-phase output from arrays of gain-guided loss coupled lasers.

INVITED PRESENTATIONS

Multi Spectral Imaging: JPL Technical Presentation
Rick Clayton, Director of Product Development, Annidis Corporation
Invited presentation, Jet Propulsion Labs, April 22, 2015

Annidis - creating a revolution in retinal care
Rick Clayton, Annidis Corporation
RECENT ADVANCES IN PHOTONICS, IEEE PHOTONICS SOCIETY OTTAWA CHAPTER WITH NRC/OPC/OPRA, March 15, 2013

Telecom optical components after the bubble: What kind of light is at the end of the tunnel?
Rick Clayton, Bookham
The Ottawa Network, Ottawa, Canada, December, 2004

Challenges in Optical Component Packaging
Rick Clayton, Bookham
COPA kickoff meeting, Ottawa, Canada, July 2004

Technology for the current telecoms environment
Rick Clayton, Bookham
OCRI Partnership Conference Series: The Photonics Conference, Ottawa, September 2003

PANELS AND WORKING GROUPS

MIT Communications Technology Roadmap - Phase II (2009):
Chapter co-author/editor: Photonic Interconnect, Packaging, Integration and Test

iNEMI 2007 Roadmap
Chapter co-author/editor: Optoelectronics

MIT Communications Technology Roadmap:
III-V Materials TWG (Technology Working Group) co-chair (2005)

MIT Communications Technology Roadmap - Phase I (2005):
Chapter co-author/co-editor: III-V Materials

COPA kickoff meeting, Ottawa, Canada, July 2004
Panelist

DARPA University Opto-Centers Kick-off meeting, Dana Point, Ca, Nov. 2000
Panelist: Industrial R&D

PRINT AND CONFERENCE PRESENTATIONS

A novel space ocular syndrome is driving technology advances on and off the planet
Conference (May 2017 SPIE Defense + Security)
Proc. SPIE 10194, Micro- and Nanotechnology Sensors, Systems, and Applications IX, 1019427 (18 May 2017)
Dorit B. Donoviel, Cheryl N. Zimmer, Richard Clayton

Innovations in Diagnostic Retinal Imaging: Multi-Spectral Imaging

Retina Today - October 2014

Cheryl Zimmer, David Kahn, Rick Clayton, with Pravin Dugel, K. Bailey Freund

Structural and Functional Evaluation of Macular Pathology by Multi-spectral Fundus Imaging

American Academy of Optometry Meeting in San Francisco. Nov. 17-20, 2010.

A. Boate, PhD (1), B.C. Leonard, MD (2), R. Clayton, BASc (1), J. Gribben, MCS (1), S.G. Coupland, PhD (2), R.G. Devenyi, MD (3), J. Sherman, OD (4), S. Richer, PhD (5)

Multi-spectral fundus imaging is a promising tool in the structural and functional evaluation of macular pathology

Brian Leonard, Alan Boate, Rick Clayton, Jeremy Gribben, Bernard Hurley, Stuart Coupland, Rejean Munger,Robert Devenyi

Canadian Ophthalmological Society Annual Meeting, Québec City, 2010

Photonics Packaging Scenarios: Presentation and Discussion

Rick Clayton, Consultant

Photonic Packaging Workshop, Utrecht, October 23, 2009

III-V optoelectronic integration issues and the MIT Communications Technology Roadmap (CTR)

Rick Clayton, consultant

CS-MAX 2005, Palm Springs, October 31 – November 2, 2005

Microphotonics: Hardware for the information Age

Rick Clayton, consultant

(*MIT Photonic Roadmap Group*)

ePIXnet Annual Meeting, Eindhoven, 12-13 September, 2005

Cost effective hybrid and monolithic integration for metro and long haul optical systems

R. Clayton; A. Carter; K. Anderson; I. Betty; L. Langley, T. Simmons, Bookham

ITCOM, Conference 5248: Semiconductor Optoelectronic Devices for Lightwave Communication, September, 2003

Flexible polymer waveguides for optical wire bonds

Cynthia Clark, Jason Robinson and Richard Clayton

OPTO-Canada, Conference CA04, May 2002

published in J. Opt. A: Pure Appl. Opt. 4 S224-S227, 2002

Towards the Use of Quantum Well Intermixing in Manufacturing.

J.E. Haysom, R. Clayton, D. Macquistan, P.J. Poole, G.C. Aers, F. Yang, S. Campbell, G.T. Andrews, R. Krishnamurthy, A. Ait-Ouali, R. Tong, R. Glew, T. Simpson, I.V. Mitchell and S. Charbonneau

10th Canadian Semiconductor Technology Conference, Ottawa, August, 2001.

Integrated Optoelectronics

Rick Clayton, Nortel

GaAs Mantech, Las Vegas, NV, April 2001

Dependence of Thermal Stability and Quantum Well Intermixing on Epitaxial Growth

J.E. Haysom,, F. Yang, P.J. Poole, G. Aers, S. Raymond, T. Simpson, I.V. Mitchell, R. Clayton, D. MacQuistan, S. Charbonneau

9th Canadian Semiconductor Technology Conference, Ottawa, August, 1999.

Flexible adjustment of the emission wavelengths of laser structures by ion beam implantation

U.G. Akano, I.V. Mitchell, F.R. Shepherd, A. Margittai, R. Clayton and C.J. Miner

MRS Fall Meeting: SYMPOSIUM I, III-V and SiGe Group IV Device/IC Processing Challenges for Commercial Applications, Boston, November, 1998

Above-threshold longitudinal profiling of carrier nonpinning and spatial modulation in asymmetric cavity lasers

A. J. Bennett, R. D. Clayton, J. M. Xu

JOURNAL OF APPLIED PHYSICS, V83, #7, 1 APRIL 1998, pp 3784-3788

Investigations of the spectral characteristics of 980-nm InGaAs-GaAs-AlGaAs lasers

Avrutsky, I.A.; Gordon, R.; Clayton, R.; Xu, J.M.

IEEE Journal of Quantum Electronics vol.33, no.10 p.1801-9, Oct. 1997

EBIC and TEM analysis of catastrophic optical damage in high- power GaAlAs/GaInAs lasers

Mallard, R.E.; Clayton, R.

Photonics West, Conference 3004, San Jose, CA, February 1997

Proc. SPIE - Int. Soc. Opt. Eng. (USA)vol.3004 p.145-50, 1997

Longitudinally resolved measurements of carrier concentration and gain in 980 nm InGaAs/GaAs high power quantum well lasers

Bennett, A.J.; Sargent, E.H.; Clayton, R.D.; Kim, H.B.; Xu, J.M.
Proc. SPIE - Int. Soc. Opt. Eng. (USA)vol.3004 p.160-9: 1997

Increased threshold for the first-order lateral mode lasing in low-ridge waveguide high power QW lasers

Xu, M.L.; Tan, G.L.; Clayton, R.; Xu, J.M.
IEEE Photonics Technology Letters vol.8, no.11 p.1444-6, Nov. 1996

Longitudinal carrier density profiling in semiconductor lasers via spectral analysis of side spontaneous emission

Sargent, E.H.; Pavlidis, D.; Anis, H.; Golinescu, N.; Xu, J.M.; Clayton, R.; Kim, H.B.
Journal of Applied Physics vol.80, no.3 p.1904-6, 1 Aug. 1996

Electro-optic probing of GaAs circuits (oral only)

R. Clayton
Canadian Semiconductor Technology Conference, 1992

Scanning birefringence mapping of semi-insulating GaAs wafers

Clayton, R.D.; Bassignana, I.C.; Macquistan, D.A.; Miner, C.J.;
Semi-insulating III-V Materials, 1992 Proceedings of the 7th Conference on, Pages: 211 – 216, 21-24 April 1992