

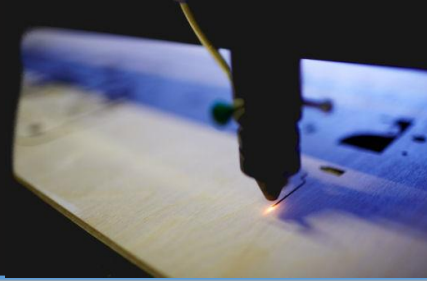
Jean-Charles Cotteverte BSc MSc PhD

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 [LinkedIn](#)



Profile

Highly innovative optical physicist and problem solver with a meticulous eye for details; deep knowledge of laser physics, optics, and photonics; and more than 30 years experience in research, development and engineering, including laser design and optical modelling, to create, adapt and improve optical products, and secure 15 patents

An accomplished bilingual communicator with excellent presentation and collaborative skills, together with the ability to forge strong relationships at all levels as well as lead, develop and empower teams to achieve demanding performance objectives

Career and Key Achievements to Date

-  **Optical & Laser Development Manager** Jan 2020-Oct 2024
 Novanta Technologies, Stockport, UK
- Development Manager at Novanta Technologies, applying in-depth and broad experience across optics and laser physics
 - Managed a number of Intellectual Property developments and other technological projects in the R&D department
 - Led an ECDL project to improve the spectrum and the beam quality (M2) applying ABCD modelling for the latter
 - Drafted a patent for 2 possible applications: more efficient pumping and the mitigation of filamentation
 - Investigated the use of AI in data processing and laser cavity design, mixed with optimisation techniques
 - Investigated the possibility of a 349nm project, and also made a preliminary investigation of AOM modulation
 - Supported 561nm laser improvement, optimising mirror coatings and managing thermal lensing via design optimisation
 - Recommended a methodology to measure Contrast Ratio in real-time, and improved PID tuning to stabilise temperatures
 - Modelled and improved 457 nm DPSS 10W contamination issues, and measured contaminated profiles with WLI
 - Developed a 640nm Pr:YLF laser, with the main focus on output coupling optimisation
 - Obtained 1.6W TEM00 at 640nm with 5W single-diode pumping (444nm) and improved power from a 3.5W pump diode
 - Adjusted the coherence curve to the client's request and also the symmetry of the optical spectrum, securing 2 patents
 - Held exhaustive discussions with patent attorneys, to explain the physics, refine the wording, and to reply to Examiners
-  **Optical & Laser Development Manager** Apr 2019-Jan 2020
 Novanta Inc. Stockport, UK
- Appointed Development Manager, following the take-over of Laser Quantum by Novanta Incorporated
 - Managed, inspired and empowered 4 engineers, specialising in designing and testing prototype lasers
 - Developed a prototype of a CW UV laser, several 100s mW at 355nm, with lifetime improved by >2 orders of magnitude
 - Investigated the damages on coatings and surfaces due to the Ultraviolet, using WLI measurement
 - Improved a prototype laser at 457nm, 10+ W; optimised the design with ABCD modelling
-  **Optical & Laser Development Manager | Senior R&D Scientist** Aug 2007-Apr 2019
 Laser Quantum Limited, Stockport, UK
- Promoted from Senior R&D Scientist to the Optical & Laser Development Manager in December 2010 at Laser Quantum
 - Managed, coached and motivated a team of up to 4 high performing development engineers

CONTINUED

Career and Key Achievements to Date (continued)

- Designed and modelled DPSS lasers (CW, Q-switch, visible/UV, SHG/THG) for wavelengths: 355nm, 457nm, 532nm, 640nm
 - Doubled the output power (30W) at 532nm with a specific design resulting in 1 patent; Lifetime: 2 yrs at 20W 24/7
 - Developed an alignment technique for specific cavities and investigated the optical damages to increase the lifetime
- PCI/CPPI: built the set up to measure the residual absorption of gain crystals at lasing wavelength, using a lock-in amplifier
- Designed a sub-assembly method for production of visible fibre lasers (power scaling multi 10s W with free-space SHG)
 - Developed an in-situ technique for aligning and mode-matching the free-space part
- Actively Q-switched a DPSS laser that was designed for the solar panel market
- Helped realise out-of-plane pick-off to reduce sensitivity to surface contamination; the system resulted in 1 patent

 **Team Leader Laser Group**
 XYZ Imaging, Montreal, QC, Canada

May 2002-Oct 2006

- Team leader at XYZ for the group designing, developing, improving & maintaining the laser used in holographic printers
- Managed all aspects of safety, reliability, performance and costs associated with the laser, both at XYZ and client sites
- Established an appropriate alignment method for the resonator and the frequency conversion from infrared to visible
- Improved beam quality by simulating propagation with diffraction & frequency conversion, then applying to experiment
- Regulated laser temperatures, reduced threshold, increased lamp lifetime, and stabilised pulse energy, securing 2 patents
- Specification: Nd:YAG, pulsed, flashlamp-pumped; 30 Hz ; 10-20mJ ; 40-70ns ; 1064nm and 1319nm ; SHG and THG

Earlier Career

- R&D Project Leader at Corning Inc. for optical communications, a role involving substantial international travel 1996-2001
- Assistant Professor, Université de Rennes, teaching MSc laser physics, electronics and general optics & physics 1994-1996

Qualifications

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|---|-----------|
| • PhD in Optical Physics, Université de Rennes, Brittany, France | 1991-1994 |
| • MSc in Aeronautics, Cranfield University, UK | 1991 |
| • MSc in Automatic Control Engineering, Higher Institute of Aeronautics and Space, Toulouse, France | 1998-1991 |
| • BSc in Physics, Université de Rennes, Brittany, France | 1987-1988 |

Patents, Publications & Projects

- Full details of 15 **patents** for laser designs, systems and methods; optical apparatus & methods; crystals; etc. [available here](#)
- Full details of 14 **publications** in CLEO, Optics Communications, Annales de Physique, Applied Optics, etc. [available here](#)
- Full details of 24 **projects** encompassing laser design and optimisation, AI, birefringence, miscalibration, etc. [available here](#)

Skills & Key Competencies

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|---|---|
| • Exceptional laser physics, optics & photonics expertise | • Highly innovative, insightful and resourceful designer |
| • Excellent research, design & patent application skills | • Analytical, incisive troubleshooter & problem-solver |
| • Expertise in laser types, applications and limitations | • Adaptable to different applications, sector & clients |
| • Knowledge of laser safety protocols and regulations | • Inherent drive, flair and readiness for any challenge |
| • Proven leadership and project management prowess | • Natural ability for engaging across all levels & cultures |
| • Accomplished communication in both English & French | • Professionalism, pragmatism and integrity at all times |