

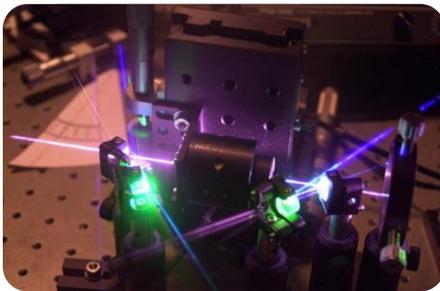
AVoptics – LightWorks™

AVoptics-LightWorks is a team of highly skilled, industry leading experts in the field of photonics and fibre optics. The team is steeped in both academic research knowledge as well as many years of experience applying the latest theoretical knowledge and technology to real world applications. The team have a genuine passion for their work and they can either seamlessly integrate into your team to assist with a project or separately manage the research and/or development of a required task. Previous customers of the AVoptics group include the European Space Agency, BAE Systems, AgustaWestland and GE.

KNOWLEDGE AREAS

The wealth of knowledge offered by the AVoptics-LightWorks team is deep and wide. Key areas of speciality include but are not limited to:

- **Free Space Optical Communications**
- **Harsh Environment Fibre Optics**
- **Fibre Optic Sensing and Structural Health Monitoring**
- **Consortium Management**



- **Electronic Design and Prototyping**
- **Underwater Optical Communications**
- **Tunable IR Lasers and Multispectral Systems**

This unique range of knowledge is combined with excellent team working skills, diligence and a work ethic that is second to none.

CONTACT US TODAY AND FIND OUT HOW WE CAN MAKE LIGHT WORK FOR YOU

Call: **+44 (0)1935 471 606**

Email: info@avoptics.com

KEY TEAM MEMBERS



IAN READ (PhD)

Ian has over 20 years of experience in industrial research and development in the aerospace and defence sector. Before embarking on this career, Ian undertook both his first degree (in physics with electronics) and his PhD (titled “Few Moded Fibre Systems”) at the University of Kent at Canterbury. A key area of Ian’s expertise is Structural Health Monitoring (SHM), in which sensing technology is applied in order to maintain the continuing integrity of a high value structure, such as an aircraft. Ian’s expertise has developed through his work on fibre optic sensing and smart structures and also encompasses acoustic emission sensing. For much of his career Ian worked for BAE Systems at the Advanced Technology Centre - this has allowed him to work collaboratively with many of the leading organisations in the field including Airbus, EADS, Dstl and NLR amongst others and many University groups in the UK and across Europe. Ian’s work ranges from proof-of-principle laboratory experiments through to flight tests of prototype systems, including fast jet testing in the AHMOS II programme. To support this scope of activity Ian has developed and matured a broad set of skills. Ian has worked at the inception of programmes developing work plans and writing proposals; he has contributed to the operation of projects through his technical skills, which include hardware design and implementation, both optical and electronic, as well as software development; he has collated, analysed and presented results both orally and in writing and he has managed the running of projects. Ian believes in adapting to the requirements of the work in hand.



GEOFF PROUDLEY (PhD MIET)

Geoff graduated in Applied Physics with Laser Technology from the University of Hull and later obtained a doctorate in non-linear optical information processing from Kings College London. He has over 27 years’ experience in R&D with British Aerospace and BAE SYSTEMS.

Research areas have included laser materials processing, non-linear optical interactions in materials, and fibre optic communication and switching systems for both military and civil platforms. This work has spanned long term research right through to troubleshooting problems for in-service platforms. Consistent across all this research is a careful and thorough approach to scientific investigation coupled with clear reporting and excellent customer relations.

Geoff established an environmental test facility at BAE SYSTEMS for testing photonic technologies over temperature, humidity, vibration and shock environments. He has a vast experience in fibre termination processes and developing best practices for production. Always looking for new and efficient ways to characterise and test hardware and systems, Geoff has recently been responsible for designing and realising a number of novel demonstrator rigs for de-risking fibre optic installation.

With a clear independent view of the market, Geoff has built strong relationships with key suppliers and end users across Europe, working in many collaborative programmes such as DTI Harness Study, FONDA, EU NOSOST, LOADNet and DAPHNE. He also sits on the BSi ACE 6/10 standards committee for aerospace fibre optics (feeding into the European ASD-STAN S2/D10 committee), actively writing and editing fibre optic standards across the industry.

KEY TEAM MEMBERS



WEZ CHARLTON (PhD MSc MSci)

Wez has over 14 years experience in research and development, including 6 years within Aerospace and Defence at the BAE Systems Advanced Technology Centre. Prior to this, Wez obtained a degree in Physics with Astrophysics from University of Bristol and an MSc in Applied and Modern Optics and PhD in Biotechnology/Physics at the University of Reading (titled Confocal Studies of Biomolecules). During his career, Wez has worked with many of the leading organisations in the field including NPL, Airbus, QinetiQ, Dstl and AugustaWestland and universities in the UK and Europe.

Wez specialises in optics, fibre and free-space optical communications and in computer control applications, often applying his skills to design hardware and software interfaces between active and passive components. His broad knowledge enables him to understand how small details can influence the overall design of a system.

Wez has a broad range of skills gained during his work in many diverse activities. These activities include market studies, technology acquisition, proof of concept/proof of principle prototype design and development and component testing. Wez also has experience of training material development, remotely operated and automated systems. Highly adaptable and enthusiastic, Wez is able to quickly grasp a situation and contribute to any project.



MALCOLM WATSON (PhD MPhys MIET)

Malcolm has amassed a wealth of experience in optics, lasers and communication, driven by his passion for practical and theoretical problem-solving. He obtained his PhD in Nonlinear Optics at Southampton's Optoelectronics Research Centre in 2003, following his Masters in Physics with Laser Science at Southampton University. His work developing novel bench-top tuneable laser sources led directly into a research scientist job at BAE Systems Advanced Technology Centre (ATC), where he remained for 11 years. During this time Malcolm developed a diverse portfolio of research across 50+ projects, including in wireless optical communication, fibre communication, infrared laser sources, hyper-spectral and active spectral imaging, software testing and hardware demonstrator prototyping. In terms of project lifecycle, Malcolm has been a key player in all areas, from bid managing and winning to project management and technical leadership. Recent successes have included:

- technical leadership and project management of several underwater optical communications projects, with a focus on optical tracking technology;
- assembly of a prototype 250 metre Gigabit Ethernet wireless optical comms system, including modifying commercial transceivers to be lightweight for mounting on masts, and culminating in a demonstration to MoD and Armed Forces;
- developing demonstrations of optical wireless data links to a pilot's helmet mounted display;
- scaling a novel academic compact laser design for application in laser countermeasures.

Malcolm is equally comfortable with hands-on lab work, writing high quality detailed reports, modelling/programming (e.g., C, Matlab, Mathcad, Arduino development language), engaging customers face-to-face and presenting findings at international conferences.
