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Front Matter: Volume 7836

, "Front Matter: Volume 7836," Proc. SPIE 7836, Technologies for Optical Countermeasures VII, 783601 (25 October 2010); doi: 10.1117/12.882094

SPIE.

Event: SPIE Security + Defence, 2010, Toulouse, France

PROCEEDINGS OF SPIE

Technologies for Optical Countermeasures VII

David H. Titterton
Mark A. Richardson
Editors

22–23 September 2010
Toulouse, France

Sponsored by
SPIE

Cooperating Organizations
Electro Magnetic Remote Sensing Defence Technology Centre (United Kingdom)
SFO—Société Française d'Optique (France)

Published by
SPIE

Volume 7836

Proceedings of SPIE, 0277-786X, v. 7836

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

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Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *Technologies for Optical Countermeasures VII*, edited by David H. Titterton, Mark A. Richardson, Proceedings of SPIE Vol. 7836 (SPIE, Bellingham, WA, 2010) Article CID Number.

ISSN 0277-786X

ISBN 9780819483546

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

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Contents

vii	Conference Committee
ix	Introduction

KEYNOTE SESSION

7836 04	Source technology as the foundation for modern infra-red countermeasures (IRCM) (Keynote Paper) [7836-03] R. J. Grasso, Northrop Grumman Electronic Systems (United States)
---------	---

SESSION 1 COUNTERMEASURE SOURCES I

7836 05	Performance requirements for countermeasures lasers (Invited Paper) [7836-04] I. Elder, Selex Galileo (United Kingdom)
7836 06	Compact fiber laser-pumped mid-infrared source based on orientation-patterned gallium arsenide [7836-05] A. Grisard, F. Guty, E. Lallier, Thales Research & Technology (France); B. Gérard, Alcatel-Thales III-V Lab. (France)
7836 07	OP-GaAs OPO pumped by 2µm Q-switched lasers: Tm;Ho:silica fiber laser and Ho:YAG laser [7836-06] C. Kieleck, A. Hildenbrand, M. Eichhorn, Institut Franco-Allemand de Recherches de Saint-Louis (France); D. Faye, E. Lallier, Thales Research & Technology France (France); B. Gérard, Alcatel-Thales III-V Lab (France); S. D. Jackson, The Univ. of Sydney (Australia)

SESSION 2 COUNTERMEASURE SOURCES II

7836 08	Thermal effects and upconversion in the Er³⁺:YAG solid-state heat-capacity laser (Invited Paper) [7836-07] M. Eichhorn, Institut Franco-Allemand de Recherches de Saint-Louis (France)
7836 09	High-pulse energy Q-switched Tm³⁺:YAG laser for nonlinear frequency conversion to the mid-IR [7836-08] G. Stöppler, C. Kieleck, M. Eichhorn, Institut Franco-Allemand de Recherches de Saint-Louis (France)
7836 0A	Q-switched resonantly pumped Er:YAG laser with a fiber-like geometry [7836-09] S. Bigotta, M. Eichhorn, Institut Franco-Allemand de Recherches de Saint-Louis (France)

SESSION 3 COUNTERMEASURE SOURCES III

- 7836 0B **Pulsed 2 μ m fiber lasers for direct and pumping applications in defence and security (Invited Paper)** [7836-10]
M. Eichhorn, Institut Franco-Allemand de Recherches de Saint-Louis (France)
- 7836 0C **A compact high power Er:Yb:glass eyesafe laser for infrared remote sensing applications** [7836-11]
M. Vitiello, A. Pizzarulli, A. Ruffini, Gem Elettronica Srl (Italy)
- 7836 0D **High power multi-wavelength infrared source** [7836-12]
E. Lippert, H. Fonnum, K. Stenersen, Norwegian Defense Research Establishment (Norway)

SESSION 4 COUNTERMEASURE TECHNOLOGY I

- 7836 0F **Toolset for evaluating infrared countermeasures and signature reduction for ships (Invited Paper)** [7836-16]
R. H. M. A. Schleijsen, TNO Defence, Security and Safety (Netherlands)
- 7836 0G **Development of a compact frequency conversion module for airborne countermeasures** [7836-17]
A. Godard, M. Raybaut, T. Schmid, M. Lefebvre, ONERA (France); A.-M. Michel, C. Oudart, S. Teixeira, M. Péalat, SAGEM, Groupe SAFRAN (France)

SESSION 5 COUNTERMEASURE TECHNOLOGY II

- 7836 0J **Thermal management investigations in ceramic thin disk lasers** [7836-21]
N. Vretenar, Ctr. for High Technology Materials, Univ. of New Mexico (United States); T. Carson, Air Force Research Lab. (United States); A. Lobad, P. Peterson, Boeing LTS Inc. (United States); T. C. Newell, W. P. Latham, Air Force Research Lab. (United States)
- 7836 0K **Numerical laser beam propagation using a Large Eddy Simulation refractive index field representing a jet engine exhaust** [7836-22]
L. Sjöqvist, M. Henriksson, E. Fedina, C. Fureby, Swedish Defence Research Agency (Sweden)
- 7836 0L **Laser beam propagation through a full scale aircraft turboprop engine exhaust** [7836-24]
M. Henriksson, O. Gustafsson, L. Sjöqvist, Swedish Defence Research Agency (Sweden); D. Seiffer, N. Wendelstein, Fraunhofer-Institut für Optronik, Systemtechnik und Bildauswertung (Germany)

SESSION 6 COUNTERMEASURE MODELLING

- 7836 0M **Effect of payload size on pre-emptive flare countermeasure against Man-Portable Air-Defence (MANPAD) system** [7836-20]
J. Jackman, M. Richardson, P. Yuen, D. James, Cranfield Univ. (United Kingdom); B. Butters, R. Walmsley, N. Millwood, Chemring Countermeasures Ltd. (United Kingdom)

- 7836 ON **Effect of pre-emptive flares on Man-Portable Air-Defence (MANPAD) systems with a track angle bias counter-countermeasure (CCM)** [7836-23]
J. Jackman, M. Richardson, Cranfield Univ. (United Kingdom); B. Butters, R. Walmsley, N. Millwood, Chemring Countermeasures Ltd. (United Kingdom); P. Yuen, D. James, Cranfield Univ. (United Kingdom)
- 7836 OO **A theoretical investigation of stimulated Brillouin scattering in phase-modulated fiber amplifiers** [7836-25]
C. M. Zeringue, I. Dajani, Air Force Research Lab. (United States)
- 7836 OP **Numerical study of the thermal infrared characteristics for orbital objects** [7836-26]
F. Li, X. Xu, BeiHang Univ. (China)

SESSION 7 BEAM STEERING AND QUANTUM-CASCADE LASERS

- 7836 OQ **Mid-infrared semiconductor lasers for power projection and sensing (Invited Paper)** [7836-13]
H. D. Tholl, Diehl BGT Defence GmbH & Co. KG (Germany); J. Wagner, M. Rattunde, S. Hugger, F. Fuchs, Fraunhofer-Institut für Angewandte Festkörperphysik (Germany)
- 7836 OR **Beam steering in mid-infrared emitting quantum-cascade lasers** [7836-14]
M. Kinzer, F. Fuchs, S. Hugger, B. Hinkov, W. Bronner, R. Loesch, R. Aidam, Q. Yang, Fraunhofer-Institut für Angewandte Festkörperphysik (Germany); H. D. Tholl, Diehl BGT Defence GmbH & Co. KG (Germany)
- 7836 OS **High energy laser beam steering with periodic shock waves** [7836-15]
M. S. McBeth, Space and Naval Warfare Systems Ctr. Atlantic (United States)
- 7836 OU **Quantum-cascade lasers with emission wavelength 3-5 μm** [7836-28]
W. T. Masselink, M. P. Semtsiv, Humboldt-Univ. zu Berlin (Germany)

Author Index

Conference Committee

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Session Chairs

Keynote Session

David H. Titterton, Defence Science and Technology Laboratory
(United Kingdom)

1 Countermeasure Sources I

Marc Eichhorn, Institut Franco-Allemand de Recherches de Saint-Louis
(France)

- 2 Countermeasure Sources II
Ian F. Elder, SELEX Galileo Ltd. (United Kingdom)
- 3 Countermeasure Sources III
Tim C. Newell, Air Force Research Laboratory (United States)
- 4 Countermeasure Technology I
Ric H. M. A. Schleijpen, TNO Defence, Security and Safety
(Netherlands)
- 5 Countermeasure Technology II
Brian Butters, Chemring Countermeasures Ltd. (United Kingdom)
- 6 Countermeasure Modelling
David H. Titterton, Defence Science and Technology Laboratory
(United Kingdom)
- 7 Beam Steering and Quantum-Cascade Lasers
Hans Dieter Tholl, Diehl BGT Defence GmbH & Co. KG (Germany)

Introduction

The purpose of this conference was to provide a technical forum for the discussion and dissemination of information on optical, electro-optical, and infrared technologies as applied to the countermeasure role in security and defence. This was the seventh conference in the series for the Security & Defence Symposium.

Since the polished shields of antiquity that were used to reflect the sun into the enemy's eyes over two millennia ago, optics and optical systems have been used on the battlefield as a cost-effective countermeasure; a classical force multiplier. The simplest modern optical countermeasure techniques can still be extremely inexpensive in comparison with the platform/weapon system that they protect. Take for example, the humble infrared flare ejected from the multi-million dollar aircraft, and the smoke screen deployed to protect an armoured fighting vehicle or column of vehicles. More sophisticated defensive aid systems are being developed that can encompass sensor systems, tracking systems, active and passive countermeasures, and sophisticated control and processing systems. It was all of these techniques and their underlying technologies, from the simple to the complex, which this conference aimed to discuss.

The conference content was similar to last year, with 28 high-quality papers being presented over the last two days of the symposium. Interest and attendance were high throughout; the sizeable conference room was usually full, with some people having to stand for some of the sessions, especially for the extended keynote session and during the invited papers. The importance of the laser source in various approaches to countermeasure techniques and was evident by the fact that a number of the sessions were focused on laser technology in countermeasure systems; most appropriate in this jubilee year for the laser. Additionally, there were sessions on supporting technology and a general session on modelling and simulation.

The conference theme was started with an excellent keynote address session, which provided an excellent overview of the challenges for laser technology. The first paper reported on the recent successes of high-energy laser projects such as the airborne laser from the U.S. Department of Defense and the projects sponsored by the High-Energy Laser Joint Technology Office in the USA. A most interesting presentation was given on the recent developments with quantum cascade laser technology and the vast range of applications to which it is being applied in the security and defence arena. The final keynote address emphasised that the laser is the foundation for infrared countermeasure systems to protect all platforms.

Most of the seven sessions typically started off with an invited paper, followed by two or three contributing papers. All of the papers were well received and created significant interest and subsequent questioning.

We therefore commend the following papers to your attention and invite you to advance the topic of Technologies for Optical Countermeasures even further, by submitting your research and development work for consideration in next year's conference in Prague (The Czech Republic).

David H. Titterton
Mark A. Richardson