Peer reviewed publications

Synthesis of vertically aligned titanium dioxide nanotubes on microcantilevers for new nanostructured micromechanical sensors for explosive detection
COTTINEAU T.*, PRONKIN S.*, ACOSTA M.*, MÊNY Ch.*, SPITZER D., KELLER V.*
Ref. ISL: PR-U-PU-6013/2013

Reply to comment on "Tunable generation and adsorption of energetic compounds in the vapor phase at trace levels: A tool for testing and developing sensitive and selective substrates for explosive detection"
BONNOT K., BERNHARDT P.*, HASSLER D., BARAS Ch., COMET M., KELLER V.*, SPITZER D.
Analytical Chemistry 2013, 85, 3016-3016 - © 2013 American Chemical Society
Ref. ISL: PR-U-PU-6014/2013

The security in pyrotechnics: scientific fact or regulation?
COMET M., SCHNELL F., PICHOT V., SIEGERT B., SPITZER D.
L'Actualité Chimique, Avril 2013, n°373, p. 31-36 - © Société Chimique de France (SCF)
Ref. ISL: PR-U-PU-6016/2013

First ballistic evaluations of aluminium-based nanocomposites consolidated by the SPS process
LEMONNIER S., BARRAUD E., NUSSBAUM J., TERNER C., QUESNAY F., SORREL E., MOITRIER F.
27th International Symposium on Ballistics (ISB), Freiburg, DE, April 22-26, 2013
Ref. ISL: PR-PU-6019/2013

Dynamic compaction resistance sintering validation tests on alumina ceramics of this new flash sintering process
ACQUIER P., LEMONNIER S., TERNER C., ALLAIN-BONASSO N.*, RUSINEK A.*, GRÖSĐIDIER T.*, BARRAUD E.
Fifth International Conference on Shaping of Advanced Ceramics, "Shaping 5", Mons, BE, January 29-31, 2013
Ref. ISL: PR-PU-6021/2013

Spark plasma sintering of YAG transparent ceramics
MARLOT C., LE GALLET S.*, NAIMI F.*, BARRAUD E., EICHHORN M.*, BERNARD F.*
Fifth International Conference on Shaping of Advanced Ceramics, "Shaping 5", Mons, BE, January 29-31, 2013
Ref. ISL: PR-PU-6022/2013

Local detection of nitrogen-vacancy centers in a nanodiamond monolayer
Nano Lett., 2013, 13(12), pp. 5803-5807 - © 2013 American Chemical Society
Ref. ISL: PR-U-PU-6060/2013

* not member of ISL
Energetic and advanced protective materials

Understanding ultrafine nanodiamond formation using nanostructured explosives
PICHOT V., RISSE B., SCHNELL F., MORY J., SPITZER D.
Scientific Reports 3, 2159 (2013) - © 2013 Nature Publishing Group
Ref. ISL: PR-U-PU-6061/2013

Dynamic Compaction Resistance Sintering (DCRS) : effet de l’impact sur les propriétés physiques de spécimens de cuivre fritté
MOITRIER F., ACQUIER P., LEMONNIER S., BARRAUD E., ALLAIN-BONASSO N.*, GROSDIDIER T.*, RUSINEK A.*
Congrès « Poudre et Matériaux Frittés » (PMF2013), 22 mai 2013, Belfort, FR
Ref. ISL: PU-6026/2013

Electrochemical properties of hollow iron oxide nanostructures as electrodes for super capacitor or Li-battery
GERBER O., BÉGIN-COLIN S.*, PICHON B.P.*, BARRAUD E., LEMONNIER S.
Presentation at the E-MRS 2013 Spring Meeting, Strasbourg, FR, May 28, 2013
Ref. ISL: PU-6033/2013

Dynamic Compaction Resistance Sintering: Effect of impact on physical properties of copper pellets
ACQUIER P., LEMONNIER S., TERNER C., ALLAIN-BONASSO N.*, RUSINEK A.*, GROSDIDIER T.*, BARRAUD E.
Conférence EUROMAT 2013, Sevilla, ES, September 8-13, 2013
Ref. ISL: PU-6042/2013

Electrochemical properties of hollow iron oxide nanostructures as electrodes for super capacitor or Li-battery
GERBER O., BÉGIN-COLIN S.*, PICHON B.P.*, BARRAUD E., LEMONNIER S.
EUROMAT 2013, Sevilla, ES, September 8-13, 2013
Ref. ISL: PU-6044/2013

* not member of ISL
Flight techniques for projectiles

Peer reviewed publications

Aerodynamic performance of a gun launched micro air vehicle
GNEMMI P., MEDER K., REY C.
Ref. ISL: PR-PU-6001/2013

Investigation of the Magnus effect of a generic projectile at Mach 3 up to 16 degrees angle of attack
KLATT D., HRUSCHKA R., LEOPOLD F.
Journal of Applied Mechanics, May 2013, Vol. 80 - © 2013 ASME
Ref. ISL: PR-U-PU-6020/2013

Guidance and control design for a class of spin-stabilized fin-controlled projectiles
THEODOULIS S., GASSMANN V., WERNERT Ph., DRITSAS L.*, KITSIOS J.*, TZES A.*
Ref. ISL: PR-PU-6024/2013

Computation validation on lateral jet interactions at supersonic speeds
GNEMMI P., GRUHN P.*, LEPLAT M.*, NOTTIN Ch.*, WALLIN S.*
© 2013 Inderscience Enterprises Ltd.
Ref. ISL: PR-U-PU-6025/2013

Unidirectional fiber optic sensor for angular acceleration measurement
SCHLÖFFEL G., SEILER F.
Ref. ISL: PR-U-PU-6071/2013

Design of an enhanced patch array on a reactive impedance substrate
JAECK V., BERNARD L.
iWAT 2013, International Workshop on Antenna Technology, Karlsruhe, DE, March 4-6, 2013
© IEEE 2013
Ref. ISL: U-PU-6008/2013

Prediction of aerodynamic performances of a gun launched micro air vehicle
GNEMMI P., REY C., MEDER K.
Ref. ISL: PU-6012/2013

Supersonic projectile behaviour under electric discharges generating a plasma
GNEMMI P., REY C., WLEY P.
Ref. ISL: PU-6015/2013

* not member of ISL
Flight techniques for projectiles

Conception and realisation of a demonstrator for a hybrid projectile/MAV system. State of the work after 32 months
Workshop Interdisciplinaire sur la Sécurité Globale (WISG 2013), Troyes, FR, 22-23 janvier 2013
Ref. ISL: PU-6017/2013

Identifiability investigation of the aerodynamic coefficients from free-flight tests
ALBISSER M., DOBRE S., BERNER C., THOMASSIN M.*, GARNIER H.*
© AIAA 2013
Ref. ISL: U-PU-6037/2013

About the camel effect on heat transfer to a sphere at hypersonic flow condition
ADELI R.*, GNEMMI P., SEILER F.
Ref. ISL: PU-6039/2013

Optimal control framework for impulsive missile interception guidance
WALTER L., SCHLÖFFEL G., HOLZAPFEL F.*
© 2013 American Institute of Aeronautics and Astronautics
Ref. ISL: U-PU-6043/2013

Bandwidth behavior of miniature square cavity microstrip antennas
MARTINIS M., MAHDJOUBI K.*, SAULEAU R.*, COLLARDEY S.*, BERNARD L.
Ref. ISL: U-PU-6047/2013

Investigations on bandwidth enhancement of low-cost printed phased arrays with reactive impedance substrates
BERNARD L., JAECK V.
Ref. ISL: U-PU-6062/2013

Étude des performances d’un réseau phasé et commuté
JAECK V., BERNARD L., MAHDJOUBI K.*, SAULEAU R.*, COLLARDEY S.*, POULIGUEN P.*, POTIER P.*
Assemblée Générale du GDR ONDES 2451 Interférences d’ondes, UFR des Sciences et Techniques de Bourgognes, Dijon, FR, 28-30 octobre 2013
Ref. ISL: PU-6068/2013

* not member of ISL
Flight techniques for projectiles

Bandwidth of miniature rectangular cavity antennas
MARTINIS M., MAHDJOUBI K.*, SAULEAU R.*, COLLARDEY S.*, BERNARD L.
Assemblée Générale du GDR ONDES 2451 Interférences d'ondes, UFR des Sciences et Techniques de Bourgognes, Dijon, FR, 28-30.10.2013
Ref. ISL: PU-6070/2013

Invited paper
Fixed structure robust control design for the 155 mm canard-guided projectile roll-channel autopilot
THEODOULIS S., GASSMANN V., BRUNNER T., WERNERT Ph.
Ref. ISL: PU-6085/2013

Robust bank-to-turn autopilot design for a class of 155 mm spin-stabilized canard-guided projectiles
THEODOULIS S., GASSMANN V., BRUNNER T., WERNERT Ph.
Ref. ISL: PU-6086/2013

Micro pin interaction in fin vicinity at supersonic conditions
MARTINEZ B., LIBSIG M., GAUTHIER Th., KLATT D.
Ref. ISL: PU-6088/2013

PSP measurements on micro pin interaction in fin vicinity at supersonic conditions
GAUTHIER Th., MARTINEZ B., LIBSIG M., KLATT D.
15ème Congrès Français de Visualisation et de Traitement d'Images en Mécanique des Fluides, Orléans, FR, 18-22 novembre 2013 - © 2013 FLUVISU
Ref. ISL: U-PU-6089/2013

* not member of ISL
Laser and electromagnetic technologies

Peer reviewed publications

**Effects of explosive particle microstructure parameters on NQR parameters in RDX**
SCHUNCK Th., BORNE L., SCHLESSER F., MORY J., HIMMELSBACH R., KRÜGER D., MERLAT L.
Ref. ISL: PR-U-PU-6002/2013

**In-band pumped Ho^{3+} : KY_{3}F_{10} 2-μm laser**
SCHELLHORN M., PARISI D.*, VERONESI S.*, BOLOGNESI G.*, EICHHORN M., TONELLI M.*
Ref. ISL: PR-U-PU-6006/2013

**High-energy Ho:LLF MOPA laser system using a top-hat pump profile for the amplifier stage**
SCHELLHORN M., EICHHORN M.
Ref. ISL: PR-U-PU-6007/2013

**Pulse current characterization of SiC GTO thyristors with etched JTE**
SCHARNHOLZ S., HASSDORF R., PÂQUES G., VERGNE B., PLANSON D.
Ref. ISL: PR-U-PU-6010/2013

**Edge termination design improvements for 10 kV 4H-SiC bipolar diode**
Ref. ISL: PR-U-PU-6011/2013

**Payload acceleration using a 10-MJ DES railgun**
HUNDERTMARK S., SCHNEIDER M., VINCENT G.
Ref. ISL: PR-U-PU-6027/2013

**Using the hexagonal segmented railgun in multishot mode with three projectiles**
VINCENT G., HUNDERTMARK S.
Ref. ISL: PR-U-PU-6032/2013

* not member of ISL
Laser and electromagnetic technologies

Fast wavefront sensing using a hardware parallel classifier chip
PICHLER A., RAYMOND P., EICHHORN M.
Ref. ISL: PR-U-PU-6038/2013

Dynamic fragmentation of planetary materials: Sub-hypervelocity ejecta measurements and velocity scaling
HOGAN J.D.*, SPRAY J.G.*, ROGERS R.J.*, VINCENT G., SCHNEIDER M.
Planetary and Space Science, Volume 87, October 2013, Pages 66-77
© 2013 Elsevier Ltd.
Ref. ISL: PR-U-PU-6053/2013

Dynamic fragmentation of planetary materials: Ejecta length quantification and semi-analytical modeling
HOGAN J.D.*, SPRAY J.G.*, ROGERS R.J.*, VINCENT G., SCHNEIDER M.
Ref. ISL: PR-U-PU-6054/2013

Dynamic fragmentation of natural ceramic tiles: Ejecta measurements and kinetic consequence
HOGAN J.D.*, SPRAY J.G.*, ROGERS R.J.*, VINCENT G., SCHNEIDER M.
Ref. ISL: PR-U-PU-6055/2013

A four-stage XRAM generator as inductive pulsed power supply for a small-caliber railgun
LIEBFRIED O., BROMMER V.
© 2013 IEEE
Ref. ISL: PR-U-PU-6063/2013

A high-power capacitor charger using IGCTs in a boost-converter topology
BROMMER V., LIEBFRIED O., SCHARNHOLZ S.
© 2013 IEEE
Ref. ISL: PR-U-PU-6064/2013

High-pulse energy mid-IR ZGP OPO
SCHELLHORN M., STÖPPLER G., BIGOTTA S., HILDENBRAND A., KIELECK C., EICHHORN M.
Mid-Infrared Coherent Sources (MICS) 2013 paper: MW3B.1, Advanced Solid-State Lasers Congress Technical Digest - © OSA 2013
Ref. ISL: PR-U-PU-6065/2013

Development of XRAM generators as inductive power sources for very high current pulses
LIEBFRIED O., BROMMER V., SCHARNHOLZ S.
Pulsed Power Conference (PPC), 2013 19th IEEE, June 16-21, 2013, pp.1-6 - © 2013 IEEE
Ref. ISL: PR-U-PU-6067/2013

* not member of ISL
Laser and electromagnetic technologies

Short-pulse Marx generator for high-power microwave applications
PINGUET S., DUPÉROUX J.P., DELMOTE P., BIETH F., BISCHOFF R.
Ref. ISL: PR-U-PU-6069/2013

Transient 3-d simulation of an experimental railgun using finite element methods
HUNDERTMARK S., ROCH M.
Ref. ISL: PR-U-PU-6073/2013

Kilometer range filamentation
Optics Express, Vol. 21, Issue 22, pp. 26836-26845 (2013) - © 2013 Optical Society of America
Ref. ISL: PR-U-PU-6074/2013

Velocity-induced current profiles inside the rails of an electric launcher
LIEBFRIED O., SCHNEIDER M., STANKEVIC T.*, BALEVICIUS S.*, ZURAUSKIENE N.*
Ref. ISL: PR-U-PU-6028/2013

Range-gated imaging with speckle-free and homogeneous laser illumination
LAURENZIS M., POYET J.-M., LUTZ Y., MATWYSCHUK A., CHRISTNACHER F.
Ref. ISL: U-PU-6003/2013

Design and performances of a compact, high-power, wideband electromagnetic source
DELMOTE P., BIETH F., PINGUET S.
Ref. ISL: PU-6009/2013

Refurbishment of a 30-MJ-pulsed power supply for pulsed power applications
LIEBFRIED O., BROMMER V., SCHRANZHOFF S., SPAHN E.
Ref. ISL: PR-U-PU-6029/2013

* not member of ISL
Multimode antennas for nuclear quadrupole resonance detection of explosives
ADAM R., SCHUNCK Th., MERLAT L.
Second EU Conference on Detection of Explosives (EUCDE), Rome, IT, March 13-15, 2013
Ref. ISL: PU-6030/2013

Nuclear Quadrupole Resonance detection of illicit substances: Aspects of NQR signatures
SCHUNCK Th., BORNE L., BOHN M.*, ADAM R., HIMMELSBACH R., KRÜGER D., MERLAT L.
in: Proceedings of the Second EU Conference on Detection of Explosives (EUCDE) 2013
Ref. ISL: PU-6031/2013

The application of liquid dielectrics in Marx generators
BISCHOFF R., PINGUET S., DUPÉROUX J.P.
Ref. ISL: PU-6041/2013

Influence of SPS parameters on the densification of YAG ceramics for laser applications
KATZ A., BARRAUD E., LEMONNIER S., LERICHE A.*, d’ASTORG S.*
EUROMAT 2013, Sevilla, ES, September 8-13, 2013
Ref. ISL: PU-6045/2013

Novel non-planar ring cavity for enhanced beam quality in high-pulse-energy optical parametric oscillators
EICHHORN M., STÖPPLER G., SCHÖNER J., SCHELLHORN M., BIGOTTA S.
OSA Topical Meeting on Nonlinear Optics (NLO), Kohala Coast, Hawaii, USA, July 21-26, 2013 - © OSA 2013
Ref. ISL: U-PU-6056/2013

Ho<sup>3+</sup>:LLF MOPA pumped RISTRA ZGP OPO at 3-5 μm
STÖPPLER G., SCHELLHORN M., EICHHORN M.
Ref. ISL: U-PU-6066/2013

In-band pumped Ho<sup>3+</sup>:KY<sub>3</sub>F<sub>10</sub> 2-μm laser
SCHELLHORN M., PARISI D.*, VERONESI S.*, BOLOGNESI G.*, EICHHORN M., TONELLI M.*
The European Conference on Lasers and Electro-Optics (CLEO_Europe) 2013
paper: CA3_3Sun - © 2013 IEEE
Ref. ISL: U-PU-6072/2013

Compact high-power / high-energy 2 μm and mid-infrared laser sources for OCM
KIELECK C., HILDENBRAND A., SCHELLHORN M., STÖPPLER G., EICHHORN M.
Ref. ISL: U-PU-6076/2013

* not member of ISL
Protection technologies, security, situational awareness

Peer reviewed publications

Evaluating a linearized Euler equations model for strong turbulence effects on sound propagation
EHRHARDT L., CHEINET S., JUVÉ D.*, BLANC-BENON P.*
Ref. ISL: PR-U-PU-6023/2013

Comparison of thoracic wall behavior in large animals and human cadavers submitted to an identical ballistic blunt thoracic trauma
Forensic Science International, Volume 222, Issue 1, pp. 179-185, 10 October 2012
© 2012 Elsevier Ireland Ltd.
Ref. ISL: PR-U-PU-6075/2013

New hybrid foam materials for impact protection
JUNG A.*, LACH E., DIEBELS S.*
Ref. ISL: PR-U-PU-6090/2013

Results of the SCI-256 change detection trials in Amersfoort, NLD
GOND L., SCHNEIDER A., MONNIN D.
NATO SCI-256 Task Group on Route Threat Detection and Clearance Technologies
© NATO RTO 2013 - NATO Restricted Releasable to Sweden
Ref. ISL: U-PU-6005/2013

Coding of range-gates with ambiguous sequences for extended three-dimensional imaging
LAURENZIS M., BACHER E., METZGER N., SCHERTZER S., CHRISTNACHER F.
Ref. ISL: U-PU-6004/2013

Explosive devices: Fragment dependent blast wave formation and its effects on a target structure
RECK B., ECKENFELS D., LEGENDRE J.-F.
8th International Nordmetall Colloquium, Adorf/Erzgebirge, DE, April 17-18, 2013
Ref. ISL: PU-6018/2013

A numerical approach to the climatology of near-surface sound levels
CHEINET S.
Ref. ISL: U-PU-6034/2013

* not member of ISL
Protection technologies, security, situational awareness

Source localization results for airborne acoustic platforms
Ref. ISL: U-PU-6035/2013

Hostile fire indicator threat data collection for helicopter-mounted applications
NAZ P., HENGY S., De MEZZO S.
Ref. ISL: U-PU-6036/2013

Source localization results for airborne acoustic platforms in the 2010 Yuma Proving Ground test
Proc. SPIE Conference 8742 (Baltimore, Maryland, USA), Ground/Air Multisensor Interoperability, Integration and Networking for Persistent ISR IV, 87420K (May 22, 2013) doi:10.1117/12.2015152 - © SPIE 2013
Ref. ISL: U-PU-6040/2013

Blast-fragment interaction effects of explosive devices at close standoff
RECK B., ECKENFELS D., LEGENDRE J.-F.
15th International Symposium on the Interaction of the Effects of Munitions with Structures (ISIEMS), Potsdam, DE, September 16-20, 2013
Ref. ISL: PU-6046/2013

Image change detection using a SWIR active imaging system
SCHNEIDER A., MONNIN D., LAURENZIS M., CHRISTNACHER F.
Ref. ISL: U-PU-6048/2013

Comparison of three methods reducing the beam parameter product of a laser diode stack for long-range laser illumination applications
LUTZ Y., POYET J.-M., METZGER N.
Ref. ISL: U-PU-6049/2013

Invited Paper
Comparison of flash and accumulation mode in range-gated active imaging
CHRISTNACHER F., LAURENZIS M., SCHERTZER S.
Ref. ISL: U-PU-6050/2013

* not member of ISL
Advanced range imaging with gated-viewing: compressed sensing and coding of range-gates
LAURENZIS M., BACHER E., SCHERTZER S., CHRISTNACHER F.
Ref. ISL: U-PU-6051/2013

Invited Paper
Non-line-of-sight active imaging of scattered photons
LAURENZIS M., VELTEN A.*
Ref. ISL: U-PU-6052/2013

Shaped charge jet penetration into masonry materials
CHANTERET P.-Y., RECK B.
27th International Symposium on Ballistics, Freiburg, DE, April 22-26, 2013
Ref. ISL: PU-6057/2013

Experimental study on the influence of weaving parameters on the ballistic performances of 3D fabrics
CHEVALIER C., NUSSBAUM J., BOUSSU F.*
27th International Symposium on Ballistics, Freiburg, DE, April 22-26, 2013
Ref. ISL: PU-6058/2013

Development of a new device for experimental study of the dynamic behaviour of ballistic yarns
CHEVALIER C., KLAVZAR A., KERISIT C., COUTELLIER D., BOUSSU F.*
Composites Week @ Leuven and TexComp-11 Conference, Leuven, BE, September 19-20, 2013
Ref. ISL: PU-6059/2013

Image change detection using a SWIR active imaging system
SCHNEIDER A., LAURENZIS M., MONNIN D., CHRISTNACHER F.
4th Workshop on Active Imaging, ISL, Saint-Louis, FR, November 20-21, 2013
Ref. ISL: PU-6077/2013

Quantification of the atmospheric scintillation for active imaging technology
POYET J.-M., CHRISTNACHER F., MEYER O.*
4th Workshop on Active Imaging, ISL, Saint-Louis, FR, November 20-21, 2013
Ref. ISL: PU-6078/2013

Comparison of flash and accumulation mode in range-gated active imaging
CHRISTNACHER F., LAURENZIS M., SCHERTZER S.
4th Workshop on Active Imaging, November 20-21, 2013, ISL, Saint-Louis, FR
Ref. ISL: PU-6079/2013

* not member of ISL
Computational optics in laser gated viewing: advanced range imaging and non-line-of-sight vision
LAURENZIS M., VELTEN A.*
4th Workshop on Active Imaging, ISL, Saint-Louis, FR, November 20-21, 2013
Ref. ISL: PU-6080/2013

Laser diode stack beam shaping for efficient and compact long-range laser illuminator
LUTZ Y., POYET J.-M., METZGER N.
4th Workshop on Active Imaging, November 20-21, 2013, ISL, Saint-Louis, FR
Ref. ISL: PU-6081/2013

Investigation of explosively dispersed glass particles
STURTZER C.A., STURTZER M.-O., VEYSSIÈRE B.*, KHASAINOV B.*
Ref. ISL: PU-6082/2013

Characterization of multiphase blast effects on infrastructure generated by explosive compositions containing high density inert material
STURTZER M.-O., MORY J., ECKENFELS D., LEGENDRE J.-F.
15th International Symposium on the Interaction of the Effects of Munitions with Structures (ISIEMS), Potsdam, DE, September 17-20, 2013
Ref. ISL: PU-6083/2013

Detonability of aluminium-oxygen suspensions
VEYSSIÈRE B.*, KHASAINOV B.*, STURTZER C.A., STURTZER M.-O., VIROT F.*
Ref. ISL: PU-6084/2013

Sound-localization performance with the hearing protectors
ZIMPFER V., SARAFIAN D.
Ref. ISL: U-PU-6087/2013

* not member of ISL