

## **Comparing a Dynamic Railgun Simulation with Experiment**

HUNDERTMARK S.

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## **Identification, Quantification and Modification of Detonation Nanodiamond Functional Groups**

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## **Synthesis of YAG Nanopowder by the Co-Precipitation Method: Influence of pH and Study of the Reaction Mechanisms**

MARLOT C., BARRAUD E., LE GALLET S.\*, EICHHORN M., BERNARD F.\*

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## **Soldier Detection Using Unattended Acoustic and Seismic Sensors**

NAZ P., HENGY S., HAMERY P.

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## **Er:YAG Transparent Ceramics for Laser Applications: Co-Precipitation Synthesis and Spark Plasma Sintering**

MARLOT C., BARRAUD E., LE GALLET S.\*, EICHHORN M., BERNARD F.\*

*10th CMCEE, Dresden, DE, Mai 22, 2012*

Ref.: ISL-PU 6039/2012

## **Céramiques polycristallines transparentes de YAG : synthèse par co-précipitation et essais de consolidation par frittage SPS YAG Polycrystalline Transparent Ceramics: Co-Precipitation Synthesis and Densification Tests by Spark Plasma Sintering**

MARLOT C., BARRAUD E., LE GALLET S.\*, EICHHORN M., MOITRIER F.\*, BERNARD F.\*

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## **Céramiques polycristallines transparentes de YAG : synthèse par co-précipitation et étude des mécanismes réactionnels**

### **YAG Polycrystalline Transparent Ceramics: Co-Precipitation Synthesis and Study of the Reaction Mechanisms**

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MARLOT C., BARRAUD E., LE GALLET S.\* , EICHHORN M., BERNARD F.\*

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## **Céramiques transparentes YAG pour applications laser : Synthèse par co-précipitation et frittage SPS**

### ***YAG Transparent Ceramics for Laser Applications: Co-precipitation Synthesis and Spark Plasma Sintering***

MARLOT C., BARRAUD E., LE GALLET S.\* , EICHHORN M., BERNARD F.\*

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Ref.: ISL-PR-PU 6046/2012

## **Spark Plasma Sintering of YAG Transparent Ceramics**

MARLOT C., BARRAUD E., LE GALLET S.\* , EICHHORN M., BERNARD F.\*

*13th European Inter-Regional Conference on Ceramics, September 12-14, 2012, Barcelona, ES*

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## **Céramiques transparentes YAG pour applications laser : Synthèse par co-précipitation et densification par frittage SPS**

### ***YAG Transparent Ceramics for Laser Applications: Co-precipitation Synthesis and Spark Plasma Sintering***

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## **Deformation Analysis of Railgun Cross-Section**

GILDUTIS P.\* , KAČIANAUSKAS R.\* , SCHNEIDER M., STUPAK E.\* , STONKUS R.\*

© *MECHANIKA*, ISSN 1392-1207. 2012 Volume 18(3): 259-265

Ref.: ISL-PR-U-PU 6051/2012

## **Élaboration de nanostructures d'oxyde de fer creuses à morphologie framboise *Development of Nanostructured Iron Oxide Hollow Particles with a Raspberry Morphology***

GERBER O., BARRAUD E., LEMONNIER S., PICHON B.P.\* , BEGIN-COLIN S.\*

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## **Synthèse de nanopoudres magnétiques d'oxyde de fer avec une morphologie "framboise"**

### ***Development of Nanostructured Iron Oxides Hollow Particles with a Raspberry Morphology***

GERBER O., BARRAUD E., LEMONNIER S., PICHON B.\* , BEGIN D.\* , BEGIN S.\*

*STP2012 - 7ème colloque Science et Technologie des Poudres, Toulouse, FR, 4-6 juillet 2012*

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## **Actively Q-Switched and Mode-Locked Tm<sup>3+</sup>-Doped Silicate 2 µm Fiber Laser for Supercontinuum Generation in Fluoride Fiber**

ECKERLE M., KIELECK C., ŚWIDERSKI J.\*, JACKSON S.D.\*, MAZÉ G.\*, EICHHORN M.  
*Optics Letters, Vol. 37, No. 4, February 15, 2012 - © 2012 Optical Society of America*  
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## **Optical Parametric Generation in CdSiP<sub>2</sub> at 6.125 µm Pumped by 8 ns Long Pulses at 1064 nm**

MARCHEV G.\*, TYAZHEV A.\*, PETROV V.\*, SCHUNEMANN P.G.\*, ZAWILSKI K.T.\*, STÖPPLER G., EICHHORN M.  
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## **Spark Plasma Sintering of YAG Transparent Ceramics**

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## **YAG Transparent Ceramics for Laser Applications**

MARLOT C., BARRAUD E., LE GALLET S.\*, EICHHORN M., BERNARD F.\*  
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## **YAG Transparent Ceramics for Laser Applications**

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*2nd French-German Oxidecrystal/Dielectrica/Lasercrystal Workshop, ISL, Saint-Louis, FR, September 20-21, 2012*  
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## **Hollow Iron Oxide Nanoparticles with Raspberry Morphology. Structural Characterisations and Electrochemical Evaluations**

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## **Experimental Investigation of a UHF Radio Link to a Railgun Projectile**

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## **Transient 3-d Simulation of an Experimental Railgun Using Finite Element Methods**

HUNDERTMARK S., ROCH M.  
*IEEE's 16th International Symposium on Electromagnetic Launch Technology (EML), Conference Proceedings, 2012, Beijing, CN, 15-19 May 2012 - © IEEE 2012*  
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## **Design of an Efficient Measurement Cell for Characterizing Sensing Properties of Nanostructured Sensitive Layers Coated on Chips**

BONNOT K., SIEGERT B., COTTINEAU T.\*, KELLER V.\*, SPITZER D.

*Sensors and Actuators B, Vol. 166–167 (2012) pp. 829-832 - © 2012 Elsevier*

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## **A Biophotonic Sensor for the Specific Detection of DMMP Vapors at the ppb Level**

BONNOT K., SIEGERT B., PIAZZON N., SPITZER D., SANSANO J.\*, RODRIGO M.\*, CUESTA-SOTO F.\*, VARRIALE A.\*, D'AURIA S.\*, SANCHEZ N.\*, LOPEZ-ROYO F.\*, SANCHEZ J.J.\*

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## **Electrostatic Grafting of Diamond Nanoparticles towards 3D Diamond Nanostructures**

SPITZER D., COTTINEAU T.\*, PIAZZON N., JOSSET S., SCHNELL F., PRONKIN S.\*, SAVINOVA E.\*, KELLER V.\*

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## **Increase of Accuracy for CBOS by Background Projection**

LEOPOLD F., JAGUSINSKI F., DEMEAUTIS C., OTA M.\*, KLATT D.

*15th International Symposium on Flow Visualization, Minsk, BY, June 25-28, 2012 - © Springer 2012*

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## **Reconstruction of the Density Field Using the Colored Background Oriented Schlieren Technique**

SOURGEN F., LEOPOLD F., KLATT D., JAGUSINSKI F., BERNER C., HAERTIG J.

*Optics in Lasers and Engineering, Volume 50, No. 1, pp. 29-38, 2012 - © 2012 Elsevier B.V.*

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## **Molecularly Resolved Cellulose Nitrate: Imaging of the Nitropolymer by Atomic Force Microscopy**

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## **Mach Wave Noise of a Supersonic Jet**

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*ISFV15, Proceedings of the 15th International Symposium on Flow Visualization, Minsk, BY, June 25-28, 2012*

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# Laser and Laser Applications

## **ZGP RISTRA OPO Operating at 6.45 $\mu\text{m}$ and Application in Surgery**

STÖPPLER G., EICHHORN M., SCHELLHORN M., BEEN S.L.\*, VERDAASDONK M.\*

*Lasers, Sources, and Related Photonic Devices Technical Digest; Conference Paper: Advanced Solid-State Photonics (ASSP), San Diego/CA, January 29, 2012 - © 2012 OSA*

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## **Imagerie active : la maturité des systèmes ouvre de vastes perspectives**

### **Active Imaging: System Maturity Offers Great Opportunities**

CHRISTNACHER F., MONNIN D., LAURENZIS M., LUTZ Y., MATWYSCHUK A.

*Photoniques, Numéro 55, Septembre - Octobre 2011, pp. 44 - 51 - © EDP Sciences, 2011*

Ref.: ISL-U-PU 6017/2012

## **Investigation of Range-gated Imaging in Scattering Environments**

LAURENZIS M., CHRISTNACHER F., MONNIN D., SCHOLZ Th.\*

*Optical Engineering 51(6), May 07, 2012 - © 2012 SPIE*

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## **Homogeneous and Speckle-free Laser Illumination for Range-gated Imaging and Active Polarimetry**

LAURENZIS M., LUTZ Y., CHRISTNACHER F., MATWYSCHUK A., POYET J.-M.

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## **Vision through Scattering Media: Underwater Range-gated Active Imaging**

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*ESM1/Naval Laser Applications Workshop (ESM1, IAP3, IAP4) European Defence Agency, Brussels, BE*

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## **Efficient Laser Emission in $\text{Ho}^{3+}:\text{LiLuF}_4$ Grown by Micro-Pulling Down Method**

VERONESI S.\*, ZHANG Y.\*, TONELLI M.\*, SCHELLHORN M.

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## **Gaussian-versus Flat-Top-Pumping of a mid-IR ZGP RISTRA OPO**

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## **The European Air Defence High-Energy Laser Weapon Project**

DIENER K., PROTZ R.\*

*SPIE Proceedings, Security and Defence 2012, Edinburgh, GB, September 24-27, 2012 - © SPIE 2012*

Ref.: ISL-U-PU 6084/2012



# Laser and Laser Applications

## **Size and Shape Effects on the Nonlinear Optical Behavior of Silver Nanoparticles for Power Limiters**

MULLER O., DENGLER S.\*, RITT G.\*, EBERLE B.\*

*Applied Optics*, Vol. 51, No. 35, 2012 - © Optical Society of America 2012

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# Perforation - Protection - Detonics

## **Miniaturization of Micrometric SiC from a Detonation Process of Highly Energetic Material**

GIBOT P., MORY J., MOITRIER F., VIDAL D.\*, FOUSSON E., SPITZER D.

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## **Continuous Crystallization of Submicrometer Energetic Compounds**

SPITZER D., BARAS Ch., SCHÄFER M., CISZEK F., SIEGERT B.

*Propellants, Explosives, Pyrotechnics, 2011, 36, pp. 65-74 - © 2011 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim*

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## **Highly Insensitive/Reactive Thermite Prepared from Cr<sub>2</sub>O<sub>3</sub> Nanoparticles**

GIBOT P.\*, COMET M., EICHHORN A., MULLER O., CISZEK F., BOEHRER Y., SCHNELL F.

*Propellants, Explosives, Pyrotechnics, 2011, 36, pp. 80-87 - © 2011 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim*

Ref.: ISL-PR-U-PU 6004/2012

## **Synthesis of WO<sub>3</sub> Nanoparticles for Superthermites by the Template Method from Silica Spheres**

GIBOT P., COMET M., VIDAL L.\*, MOITRIER F., LACROIX F., SUMA Y., SCHNELL F., SPITZER D.

*Solid State Sciences 13 (2011) 908-914 - © 2011 Elsevier Masson SAS*

Ref.: ISL-PR-U-PU 6006/2012

## **Développement d'un nouveau procédé de frittage flash, le DCRS - Dynamic Compaction Resistance Sintering**

### ***Dynamic Compaction Resistance Sintering: a New Flash Sintering Process Making Advanced Materials***

ACQUIER P., LEMONNIER S., TERNER C., BARRAUD E., ALLAIN-BONASSO N.\*, GROSDIDIER T.\*, RUSINEK A.\*

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## **DCRS - Dynamic Compaction Resistance Sintering. A New Flash Sintering Process for Making Advanced Materials**

ACQUIER P., LEMONNIER S., MOITRIER F., TERNER C., PINGUET S., MERLAT L., ALLAIN-BONASSO N.\*, BARRAUD E., GROSDIDIER T.\*, RUSINEK A.\*

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Ref.: ISL-PU 6028/2012

## **Dynamic Compaction at High Deformation Rates of Powders Thanks to the Split Hopkinson Pressure Bar Apparatus**

ACQUIER P., LEMONNIER S., RUSINEK A.\*, GROSDIDIER T.\*, TERNER C., BARRAUD E., ALLAIN-BONASSO N.\*, CAPELLE J.\*

Ref.: ISL-PU 6029/2012



# Perforation - Protection - Detonics

## **Compaction dynamique de poudres soumises à de hautes vitesses de déformation par le dispositif des barres d'Hopkinson**

### ***Dynamic Compaction at High Deformation Rates of Powders Thanks to the Split Hopkinson Pressure Bar Apparatus***

ACQUIER P., LEMONNIER S., RUSINEK A.\*, GROSDIDIER T.\*, TERNER C., BARRAUD E., ALLAIN-BONASSO N.\*, CAPELLE J.\*

*Colloque PMF 2011, Saint-Étienne, FR, 25 - 27 mai 2011*

Ref.: ISL-PU 6030/2012

## **Mechanical Behavior of Bulk Nanomaterials: Aluminium-nanoDiamond Composites, and Nanostructured Molybdenum**

TERNER C., BARRAUD E., BRITZ F., FLORY P., LEMONNIER S., MOITRIER F.

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## **Evaluation of the Mechanical Behaviour of Aluminium-Nanodiamond Composites Produced by SPS for Armour Applications**

TERNER C., BARRAUD E., BRITZ F., FLORY P., LEMONNIER S., MOITRIER F.

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## **Élaboration de nanocomposites base Aluminium renforcés par NanoDiamants. Propriétés mécaniques**

### ***Development of Aluminium Based Nanocomposites Reinforced with Nanodiamonds. Mechanical properties***

BARRAUD E., RIGAUT O.\*, LEMONNIER S., TERNER C., MOITRIER F.

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## **Élaboration de molybdène nanostructuré par SPS en vue de l'amélioration des propriétés mécaniques**

### ***Development of Nanostructured Molybdenum by SPS in the Aim of an Improvement of the Mechanical Properties***

LEMONNIER S., MOITRIER F., TERNER C., BARRAUD E.

*Colloque PMF 2011, Saint-Étienne, FR, 25 - 27 mai 2011*

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## **Développement d'un nouveau procédé de frittage flash, le DCRS : Dynamic Compaction Resistance Sintering**

### ***Development of a New Flash Sintering Process, the DCRS: Dynamic Compaction Resistance Sintering***

ACQUIER P., LEMONNIER S., RUSINEK A.\*, GROSDIDIER T.\*, TERNER C., BARRAUD E., ALLAIN-BONASSO N.\*

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# Perforation - Protection - Detonics

## **Le DCRS : Dynamic Compaction Resistance Sintering. Un dispositif de frittage flash à compaction dynamique**

### ***The DCRS: Dynamic Compaction Resistance Sintering. A Home-made Flash Sintering Device with a Dynamic Compaction Ability***

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## **The DCRS: Dynamic Compaction Resistance Sintering. A Flash Sintering Process with a Dynamic Loading Ability**

ACQUIER P., LEMONNIER S., RUSINEK A.\*, GROSDIDIER T.\*, TERNER C., BARRAUD E., ALLAIN-BONASSO N.\*

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# Acoustics and Protection of the Soldier

## **Propagation à grande distance de bruits impulsifs de fort niveau Long Distance Propagation of High Level Impulsive Noises**

NAZ P., CHEINET S., PORTAFAX M.

*ACOUSTICS 2012, 11ème Congrès Français d'Acoustique, Nantes, FR, 23-27 avril 2012*

Ref.: ISL-PU 6024/2012

## **Advanced Detection of Weapon Firing: Comparison of two Types of Sensor Network**

NAZ P., SCHNEIDER A., HENGY S., LAURENZIS M.

*NATO/SET-183 Symposium on Persistent Surveillance: Networks, Sensors, Architecture, Quebec City, Canada, 30 April - 01 May 2012 - © NATO RTO*

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## **Finite-Difference Time-Domain Simulation of Sound Propagation through Turbulent Atmosphere**

EHRHARDT L., CHEINET S., JUVÉ D.\*

*Acoustics 2012, Hong Kong, CN, 13-18 May 2012, joint with the 163rd Meeting of the Acoustical Society of America (ASA) - © Acoustical Society of America*

Ref.: ISL-U-PU 6035/2012

## **Spatial Localization of Sounds with Hearing Protection Devices Allowing Speech Communication**

ZIMPFER V., SARAFIAN D.\*, BUCK K., HAMERY P.

*Acoustics 2012, 11ème Congrès Français d'Acoustique, Nantes, FR, 23-27 April 2012, and "2012 Annual IOA Meeting"*

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## **Scientific Basis and Shortcomings of EU Impulse Noise Standards**

BUCK K., ZIMPFER V., HAMERY P.

*Acoustical Society of America, Vol. 131, Issue 4, pp. 3531 (2012)*

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## **A Numerical Approach to Sound Levels in Near-Surface Refractive Shadows**

CHEINET S.

*Journal of the Acoustical Society of America, 2012, Vol. 131(3), 1946-1958 - © 2012 Acoustical Society of America*

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## **Source Localization Corrections for Airborne Acoustic Platforms Based on Climatological Assessment of Temperature and Wind Velocity Profiles**

OSTASHEV V. E.\*, CHEINET S., COLLIER S. L.\*, REIFF Ch.\*, LIGON D. A.\*, WILSON D. K.\*, NOBLE J. M.\*, ALBERTS W. C. K. II\*

*Proc. SPIE 8389, 838910 (2012), Conference on Ground/Air Multisensor Interoperability, Integration, and Networking for Persistent ISR III, April 23, 2012, Baltimore, MD, US - © 2012 SPIE*

Ref.: ISL-U-PU 6045/2012



# Acoustics and Protection of the Soldier

## **Natural-to-Shouted Voice Transformation for Distance Cues of Monosyllabic Consonant-Vowel-Consonant Words**

FUX T., FENG G.\* , ZIMPFER V.

*ACTA ACUSTICA united with ACUSTICA, Vol. 98 (2012), pp. 839-843 - © S. Hirzel Verlag/EAA*

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## **Thoracic Impact Pendulum for Low-Velocity Impact Range Assessment**

MAGNAN P., De MEZZO S., HECK S., BECK C.

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## **Wireless Acoustic Modules for Real-time Data Fusion Using Asynchronous Sniper Localization Algorithms**

HENGY S., De MEZZO S., DUFFNER P., NAZ P.

*SPIE Security + Defence Meeting, Edinburgh, UK, 24-28 September 2012 - © 2012 SPIE*

Ref.: ISL-U-PU 6086/2012

## **Unified Modeling of Turbulence Effects on Sound Propagation**

CHEINET S., EHRHARDT L., JUVÉ D.\* , BLANC-BENON P.\*

*Journal of the Acoustical Society of America, 2012, Vol. 132 (4), pp. 2198-2209 - © 2012 Acoustical Society of America*

Ref.: ISL-PR-U-PU 6107/2012



# Guidance of Ammunition

## **Conception et réalisation d'un démonstrateur pour un système hybride projectile/drone miniature. État des travaux après 20 mois**

### ***Conception and Realisation of a Demonstrator for a Hybrid Projectile/MAV System. State of the Work after 20 Months***

GNEMMI P., CHANGEY S., ROUSSEL E., MEDER K., REY C., GRANDVALLET B.\* , CHAUFFAUT C.\* , BERNARD L., SCHERTZER S., WEY P., BOUTAYEB M.\* , LOZANO R.\* , SIRYANI R.\* , KOEHL A., BERNER C., MARTINEZ B.

*Workshop Interdisciplinaire sur la Sécurité Globale (WISG 2012) Troyes, FR, 24-25 janvier 2012*

Ref.: ISL-PU 6007/2012

## **Overview of Real-Time Attitude Estimation with Magnetometers**

CHANGEY S., PECHEUR E.

*Symposium Ballistik in Forschung und Technologie, Mannheim, DE, 19.-21. September 2011*

Ref.: ISL-PU 6010/2012

## **Simulation Tool for Performance Evaluations of Guided Ammunitions**

WERNERT Ph., GASSMANN V., THEODOULIS S.

*Symposium Ballistik in Forschung und Technologie, Mannheim, DE, 19.-21. September 2011*

Ref.: ISL-PU 6011/2012

## **Investigations on Dynamic Shell-Induced Distortions of the Geomagnetic Field inside Projectiles**

BERNARD L., SOMMER E., JUNOD E., PECHEUR E., CHANGEY S.

*Symposium Ballistik in Forschung und Technologie, Mannheim, DE, 19.-21. September 2011*

Ref.: ISL-PU 6012/2012

## **Filtre à fenêtre glissante**

### ***Sliding Window Filter***

GRANDVALLET B.\* , CHANGEY S., ZEMOUCHE A.\* , BOUTAYEB M.\*

*European Journal of Automation - JESA (Journal Européen des Systèmes Automatisés) - Vol. 45 - n°4-5-6/2011 - © JESA 2011*

Ref.: ISL-PR-U-PU 6013/2012

## **Real-time Estimation of Projectile Roll Angle Using Magnetometers: In-flight Experimental Validation**

CHANGEY S., PECHEUR E., BERNARD L., SOMMER E., WEY P., BERNER C.

*Position Location and Navigation Symposium (PLANS), Myrtle Beach/SC, US, April 24-26, 2012 - © IEEE*

Ref.: ISL-U-PU 6018/2012

## **Design of Printed Antennas on Reactive Impedance Substrates for Circular Polarization Operation in S-Band**

BERNARD L., CHERTIER G., SAULEAU R.\*

*6th European Conference on Antennas and Propagation (EuCAP 2012), Prague, CZ, March 26-30, 2012 - © IEEE*

Ref.: ISL-U-PU 6019/2012



# Guidance of Ammunition

## **GARTEUR AD/AG-48 - Computation Validation on Lateral Jet Interactions at Supersonic Speeds**

GNEMMI P., GRUHN P.\*, LEPLAT M.\*, NOTTIN Ch.\*, WALLIN S.\*

*47th International Symposium of Applied Aerodynamics, Paris, FR, March 26-28, 2012*

Ref.: ISL-PU 6020/2012

## **Commande par backstepping pour la poursuite de trajectoires d'un drone projectile miniature**

### ***Backstepping Control for Trajectory Following of a MAV***

DROUOT A.\*, RICHARD E.\*, BOUTAYEB M.\*, CHANGEY S.

*CIFA 2012, 7ème Conférence Internationale Francophone d'Automatique, Grenoble, FR, 4-6 juillet 2012*

Ref.: ISL-U-PU 6043/2012

## **State of Progress of the Gun Launched Micro Air Vehicle**

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