



Proceedings of Symposium on Design, Test, Integration & Packaging of MEMS/MOEMS (DTIP 2014)

Bernard Courtois, Jean-Michel Karam, Romolo Marcelli, Souhil Megherbi,
Yoshio Mita, Pascal Nouet, Andrew J. Yeh

► To cite this version:

Bernard Courtois, Jean-Michel Karam, Romolo Marcelli, Souhil Megherbi, Yoshio Mita, et al. (Dir.). Proceedings of Symposium on Design, Test, Integration & Packaging of MEMS/MOEMS (DTIP 2014). Vice General Chair: Pascal NOUET. EDA Publishing, 2014. lirmm-01434883

HAL Id: lirmm-01434883

<https://hal-lirmm.ccsd.cnrs.fr/lirmm-01434883>

Submitted on 21 Jul 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

2014 Symposium on Design, Test, Integration and Packaging of MEMS/MOEMS

(DTIP 2014)

**Cannes, France
1-4 April 2014**



**IEEE Catalog Number: CFP14DTI-POD
ISBN: 978-1-4799-3221-4**

Table of Contents

INVITED TALK 1: ELECTROMAGNETIC PHENOMENA:

CONTROL OF MAGNETIC PROPERTIES VIA ELECTRICAL INPUT	PIC
<i>Melanie W. COLE</i>	

SESSION C1: RELIABILITY AND THERMAL ISSUES

DETERMINATION OF MATERIAL PROPERTIES AND FAILURE MECHANISMS USING IN-SITU THERMO-MECHANICAL PROBE	2
<i>Brice ARRAZAT, Sylvain BLAYAC, Sebastian ORELLANA, Pierre MONTMITONNET, Karim INAL, Sebastian ORELLANA, Christian RIVERO, Pascal FORNARA, Antonio Di GIACOMO</i>	

IMPACT WEAR AND OTHER CONTACT EFFECTS ON THE ELECTRO-MECHANICAL RELIABILITY OF MEMS	7
<i>Giorgio DE PASQUALE, Aurelio SOMA', Marco BARBATO, Meneghesso GAUDENZIO</i>	

CREEP IN MEMS	13
<i>Aurelio SOMA', Giorgio DE PASQUALE, Mubasher SALEEM</i>	

RELIABILITY CHARACTERIZATION OF A SOOT PARTICLE SENSOR	17
<i>Radoslav RUSANOV, Juergen GRAF, Holger RANK, Tino FUCHS, Roland MUELLER-FIEDLER, Oliver KRAFT</i>	

DESIGN AND FEM MODELING OF NOTCH EFFECT IN GOLD MICROBEAMS	23
<i>Mubasher SALEEM, Aurelio SOMA', Giorgio DE PASQUALE</i>	

PARAMETRIC STUDY ON THERMAL PERFORMANCE OF A HYBRID DOUBLE-SIDE MICRO-JET COOLING SYSTEM.....	29
<i>Sun-min KIM, Kwang-Yong KIM</i>	

DETERMINATION OF THE SEVERITY OF THERMAL STRESS USING MODEL DATA CALCULATED THERMAL TRANSIENT RESULTS	32
<i>Zoltan SARKANY, Marta RENCZ</i>	

SESSION T1: SENSORS & ACTUATORS

DIELECTRIC LIQUID-BASED TACTILE SENSING ARRAY WITH TUNABLE SENSING RANGE USING DIELECTRIC FORCE FOR DYNAMIC TACTILE SENSING	36
<i>Kai-Wei LIAO, Amarendra KUMAR, J. Andrew YEH, Max T. HOU</i>	

THIN PZT MATERIALS FOR LARGE DEFORMATION INTERDIGITATED ACUTATORS	40
<i>Mohamed MOHAMMED ZAKI, Sandy ZAEHRINGER, Norbert SCHWESINGER</i>	

DEVELOPMENT OF WIDE PRESSURE RANGE VACUUM SENSER USING PIEZOELECTRIC BEAM STRUCTURE	44
<i>Bing-Yu WANG, Chia-Che WU</i>	

FABRICATION AND MICROMECHANICAL CHARACTERIZATION OF POLYCRYSTALLINE DIAMOND MICROCANTILEVERS	49
<i>Maira POSSAS, Lionel ROUSSEAU, Farbod GHASSEMI, Gaelle LISSORGUES, Emmanuel SCORSONE, Philippe BERGONZO</i>	

FLEXIBLE CURRENT CLAMP SENSOR USING SCREEN-PRINTED COIL	54
<i>Takahiro YAMASHITA, Yi ZHANG, Toshihiro ITOH, Ryutaro MAEDA</i>	

METER-SCALE PRESSURE SENSOR ARRAY WITH WOVEN CONDUCTIVE-POLYMER-COATED FIBERS.....	58
<i>Seiichi TAKAMATSU, Takahiro YAMASHITA, Toshihiro ITOH</i>	

NANODIAMOND SPERICAL RESONATORS FOR RF CIRCUITS	P IC
<i>Vadim LEBEDEV, Nicola HEIDRICH, Nebel CHRISTOPH , Oliver AMBACHER, Dimitre IANKOV, Verena ZUERBIG, Christoph WILD</i>	

SESSION T2A: INERTIAL SENSORS

FABRICATION OF A SYMMETRICAL ACCELEROMETER STRUCTURE	63
<i>Bin TANG, Shiwei XI, Mingqiu YAO, De ZHANG, Guofen XIE, Wei SU, Yongsheng CHENG, Kazuo SATO</i>	

A DUAL-AXIS MEMS INERTIAL SENSOR USING MULTI-LAYERED HIGH-DENSITY METAL FOR AN ARRAYED CMOS-MEMS ACCELEROMETER.....	69
<i>Daisuke YAMANE, Katsuyuki MACHIDA, Kazuya MASU, Takaaki MATSUSHIMA, Toshifumi KONISHI, Katsuyuki MACHIDA, Hiroshi TOSHIYOSHI</i>	

DESIGN AND TEST OF RESONATORS USING PIEZOMUMPS TECHNOLOGY	73
<i>Joan PONS-NIN, Sergi GORRETA, Manuel DOMÍNGUEZ, Elena BLOKHINA, Diarmuid O'CONNELL, Orla FEELY</i>	

SESSION T2B: MEMS AND ASSOCIATED ELECTRONICS

REMOTE POWER FEED AND CONTROL OF MEMS WITH 58 V SILICON PHOTOVOLTAIC CELL MADE BY A CMOS POST-PROCESS DRY RELEASE AND DEVICE ISOLATION METHOD	79
<i>Isao MORI, Masanori KUBOTA, Eric LEBRASSEUR, Yoshio MITA</i>	

LOW-NOISE CMOS AMPLIFIER FOR READOUT ELECTRONIC OF RESISTIVE NEMS AUDIO SENSOR	83
<i>Jamel NEBHEN Eric SAVARY, Wenceslas RAHAJANDRAIBE, Christian DUFAZA, Stéphane MEILLÈRE, Edith KUSSENER, Hervé BARTHELÉMY, Jaroslaw CZARNY, Hélène LHERMET</i>	

DETECTION OF MICRO-BEADS BY IMPEDANCE SPECTROSCOPY	87
<i>Agnès TIXIER-MITA, Takuya TAKAHASHI, Hiroyuki FUJITA, Hiroshi TOSHIYOSHI, Isao MORI, Yoshio MITA, Olivier FRANÇAIS, Bruno Le PIOUFLE</i>	

SESSION T3: MICROFLUIDICS AND MEDICAL APPLICATIONS

LOW POWER, MEMS LIQUID FLOW SENSOR WITH SILICONE COATING ELECTRICAL INSULATION	93
<i>Alessia DI PANCRAZIO , Paolo BRUSCHI , Massimo PIOTTO</i>	

COLLECTION OF MAGNETIC PARTICLES FROM SYNOVIAL FLUID USING ND-FE-B MICROMAGNETS.....	97
<i>Alexandra GARRAUD, Bettina KOZISSNIK, Camilo VELEZ, Elena YARMOLA, Lorena MALDONADO-CAMARGO, Carlos RINALDI, Kyle D ALLEN, Jon DOBSON, David P ARNOLD</i>	

DOUBLE EMULSION GENERATION AND SEPARATION BY MICROFLUIDIC CONSECUTIVE FLOW FOCUSING	103
<i>Benoit CHARLOT, Nicolas SANCHEZ P. ROUX, S. TEIXEIRA</i>	

DESIGN AND FABRICATION OF DRIVING MICROCOIL WITH LARGE TILT-ANGLE FOR MEDICAL SCANNER APPLICATION	108
<i>Bin SUN, Renshi SAWADA, Zhuoqing YANG, YI ZHANG, Toshihiro ITOH, Ryutaro MAEDA</i>	

A COST EFFECTIVE AND HIGHLY SENSITIVE GLUCOSE BIOSENSOR BASED ON A 3D SILICON NANOWIRE ARRAY ELECTRODE	114
<i>Wen-Chao FENG, Che-Wei HSU, His-Chien LIU, Gou-Jen WANG</i>	

FIRST EXPERIMENTATIONS OF MICROSENSORS MICROFABRICATED ON A LONG AND THIN MEDICAL NEEDLE.....	119
<i>Agnès BONVILAIN, Mathilde GANGNERON</i>	

POSTERS INTRODUCTION SESSION

ANALYSIS OF ELECTROMECHANICAL COUPLING COEFFICIENT OF SURFACE ACOUSTIC WAVE RESONATOR IN ZNO PIEZOELECTRIC THIN FILM STRUCTURE	123
<i>Aliza MD RALIB RAGHIB, Anis NORDIN</i>	

DESIGN AND ANALYSIS OF POLYSILICON THIN LAYERS AND MEMS VIBRATING STRUCTURES	129
<i>Rodica VOICU, Raluca GAVRILA, Cosmin OBREJA, Raluca MÜLLER, Angela BARACU, Marcin MICHALOWSKI, Zygmunt RYMUZA</i>	

DIRECT DIGITAL SYNTHESISER (DDS) DESIGN PARAMETERS OPTIMISATION FOR VIBRATING MEMS SENSORS	134
<i>Baptiste MARÉCHAL, Jean GUÉRARD, Raphaël LÉVY, Olivier LE TRAON, Frédéric MAILLY, Pascal NOUET</i>	

RESONANT BEHAVIOR STUDY OF PZT SENSOR IN LIQUID USING PSO METHOD.....	139
<i>M. MAROUFI, Mahnaz SHAMSHIRSAZ</i>	

ANALYTIC DESIGN METHOD FOR DISTRIBUTED RF MEMS PHASE SHIFTERS	143
<i>Andrea LUCIBELLO, Emanuela PROIETTI, Romolo MARCELLI, Giancarlo BARTOLUCCI, Giorgio DE ANGELIS</i>	

ANALYSIS OF THE ADHESION EFFECT IN RF-MEMS SWITCHES USING ATOMIC FORCE MICROSCOPE.....	146
<i>Corina BIRLEANU, Marius PUSTAN</i>	

DEVELOPMENT OF REACTIVE ION ETCHING PROCESS FOR DEEP ETCHING OF SILICON FOR MICRO-MIXER DEVICE FABRICATION.....	153
<i>Saakshi DHANEKAR, Ruchi TIWARI, Bhagaban BEHERA, Sudhir CHANDRA, R. BALASUBRAMANIAM</i>	

EVALUATING HEAT DISSIPATION IN EDGE-LIT LED BACKLIGHT MODULE USING TAGUCHI METHOD	159
<i>De-Shau HUANG, Ming-Tzer LIN, Yi-Sheng LIAO, F-C HSU, Y-T WANG, Fang-Jui KUO</i>	

NUMERICAL COUPLING OF X-RAY TOMOGRAPHY AND FINITE ELEMENT MODELLING TO EVALUATE THE ACTUAL INTERNAL PRESSURE OF A MEMS PACKAGING DESIGN AND SIMULATION	P IC
<i>Thomas PIERRE-EMILE, Cedric SEGUINEAU, Jeremie DHENNIN, Djemel LELLOUCHI, Jean-Michel DESMARRES</i>	

A NOVEL TECHNIQUE FOR FABRICATION OF MEMS BASED CAPACITIVE PRESSURE SENSOR USING PRESS-ON-CONTACT IN ANODIC BONDING.....	165
<i>Sudhir CHANDRA, Ruchi TIWARI, Chelladurai PARTHIBAN</i>	

A COMPARATIVE STUDY OF MICROSCRATCH AND MICROTENSILE ADHESION TESTS FOR NICKEL COATINGS ON VARIOUS SUBSTRATES	170
<i>Patrick NGUYEN, Jean-Michel DESMARRES, Cedric SEGUINEAU, Joël ALEXIS, Talal MASRI</i>	

CHARACTERIZATION OF CU-SN SLID INTERCONNECTS FOR HARSH ENVIRONMENT APPLICATIONS	175
<i>Alberto CAMPOS ZATARAIN, David FLYNN, Knut AASMUNDTVEIT, Nils HOIVIK, Kaiying WANG, He LIU, Thi Thuy LUU, Maria MIRGKIZOUDI, Robert KAY</i>	

DEVELOPING MEMS DC ELECTRIC CURRENT SENSOR FOR END-USE MONITORING OF DC POWER SUPPLY: PART IV – CANTILEVER-BASED MAGNETIC FIELD SENSOR DEVICE	180
<i>Daisuke TERASAWA, Dong F. WANG, Takahiro KIZAKI, Dong F. WANG, Toshihiro ITOH, Ryutaro MAEDA</i>	

INVITED TALK 2:

FROM PHOTONIC TO PHONONIC - TOWARD HEAT TRANSFER CONTROL BY MEMS NANOSTRUCTURES	184
<i>Masahiro NOMURA</i>	

SESSION C2: ACTUATORS

ROBUST DESIGN UNDER UNCERTAINTIES OF ELECTRO-THERMAL MICROACTUATOR	190
<i>B. KHAYATZADEH SAFAIE, Mahnaz SHAMSHIRAZ, M. BAHRAMI</i>	

RELIABLE RESPONSE OF RF MEMS LTCC PACKAGED SWITCHES AFTER MECHANICAL AND THERMAL STRESS.....	196
<i>Andrea LUCIBELLO, Giovanni CAPOCCHIA, Emanuela PROIETTI, Romolo MARCELLI, Benno MARGESIN, Viviana MULLONI, Flavio GIACOMOZZI, Francesco VITULLI, Michela SCIPIONI, Giancarlo BARTOLUCCI</i>	

LONG-TERM INVESTIGATIONS OF RF-MEMS SWITCHES ON FAILURE MECHANISMS INDUCED BY DIELECTRIC CHARGING	201
<i>Regine BEHLERT, Thomas Künzig, Gabriele SCHRAG</i>	

DESIGN AND OPTIMIZE OF A LOW-VOLTAGE SHUNT CAPACITIVE RF-MEMS SWITCH.....	205
<i>Li Ya MA, Norhayati SOIN, Anis NURASHIKIN NORDIN</i>	

HIGH ACOUSTIC PERFORMANCE MEMS MICROSPEAKERS	211
<i>Gilbert SASSINE, Iman SHAHOSSEINI, Marion WOYTASIK, Emile MARTINCIC, Johan MOULIN, Elie LEFEUVRE, Alexandre HOUDOUIN, Stéphane DURAND, Nourdin YAAKOUBI</i>	

DESIGN OF A LONG RANGE BIDIRECTIONAL MEMS SCANNER FOR A TUNABLE 3D INTEGRATED MIRAU INTERFEROMETER	215
<i>Wei XU, Alain BOSSEBOEUF, Fabien PARRAIN, Emile MARTINCIC</i>	

SESSION T4: CHARACTERIZATION

CHARACTERIZATION METHOD OF THE DYNAMICS OF THE TRAPPED CHARGE IN CONTACTLESS CAPACITIVE MEMS	221
<i>Sergi GORRETA, Joan PONS-NIN, Manuel DOMINGUEZ-PUMAR, Elena BLOKHINA, Orla FEELY</i>	

ELECTRICAL CHARACTERIZATION OF ORGANIC/INORGANIC HYBRID SOLAR CELLS BASED ON SILICON NANOPILLARS-POLY(3,4-ETHYLENEDIOXYTHIOPHENE):POLY(STYRENESULFONATE)	227
<i>Pushpa Raj PUDASAINI, Arturo AYON, Manisha SHARMA</i>	

OPTICAL PROPERTIES CHARACTERIZATION OF SILICON MICRO/NANOSTRUCTURES	231
<i>David ABI SAAB, Shermila MOSTARSHEDI, Philippe BASSET, Dan ANGELESCU, Elodie RICHALOT</i>	

NON-INVASIVE CAPACITIVE PRESSURE SENSOR: MICROFABRICATION PROCESS AND FIRST ELECTRO-MECHANICAL CHARACTERIZATION	235
<i>Thi Hong Nhung DINH, Pierre-Yves JOUBERT, Emile MARTINCIC, Elisabeth DUFOUR-GERGAM</i>	
FUNCTIONAL MICRO-NANO STRUCTURES FOR ON-CHIP FOURIER TRANSFORM SPECTROMETERS	240
<i>Maurine MALAK, Irène PHILIPOUSSIS, Joab DI FRANCESCO, Toralf SCHARF, Konstantins JEFIMOVS, Benedikt GULDIMANN</i>	
 MICROWAVE ATOMIC FORCE MICROSCOPE: MG63 OSTEOBLAST-LIKE CELLS ANALYSIS ON NANOMETER SCALE	244
<i>Lan ZHANG, Yuanhui SONG, Atsushi HOSOI, Yasuyuki MORITA and Yang JU</i>	

INVITED TALK 3:

ESA RF MEMS ACTIVITIES - AN OVERVIEW	P IC
<i>François DEBORGIES</i>	

SPECIAL SESSION ON NONLINEAR DYNAMICS OF MEMS AND NEMS

A HIGH RESOLUTION VIBRATING BEAM ACCELEROMETER OPERATED IN THE NONLINEAR REGION FOR SEISMIC GROUND SENSOR APPLICATIONS	250
<i>Raphael LEVY, Olivier LE TRAON, Denis JANIAUD, Jean GUERARD</i>	

ENHANCEMENT OF HIGHER HARMONICS DETECTABILITY IN A NONLINEAR NANOESONATOR	251
<i>Francisco TORRES, Gabriel VIDAL, Arantxa URANGA, Nuria BARNIOL</i>	

THE INFLUENCE OF THE PARASITIC CURRENT ON THE NONLINEAR ELECTRICAL RESPONSE OF CAPACITIVE SENSED CANTILEVER BEAMS	255
<i>Gabriel VIDAL, Francisco TORRES, Nuria BARNIOL, Oded GOTTLIEB</i>	

A COMPARATIVE STUDY OF REDUCED-ORDER MODELING TECHNIQUES FOR NONLINEAR MEMS BEAMS	261
<i>Jerome JUILLARD</i>	

THE NONLINEAR DYNAMICS OF A MICRO-SCALE ELECTROSTATIC VIBRATION ENERGY HARVESTER	266
<i>Peter HARTE, Elena BLOKHINA, Orla FEELY, Dimitri GALAYKO</i>	

SESSION C3: DESIGN AND CHARACTERIZATION

THERMOELASTIC DAMPING MODELING OF A SI RESONANT BEAM WITH NANOWIRE STRAIN GAUGES	272
<i>Guillaume LEHÉE, Fabien PARRAIN, Alain BOSSEBOEUF, Guillaume LEHÉE, Jean-Christophe RIOU</i>	

FEASIBILITY STUDY OF A MEMS MICROPHONE DESIGN USING THE POLYMUMPS PROCESS	278
<i>Ryan GRIXTI, Ivan GRECH, Owen CASHA, Jean-Marie DARMANIN, Edward GATT, Joseph MICALLEF</i>	

NANOMECHANICAL AND NANOTRIBOLOGICAL CHARACTERIZATION OF MEMS MICROMEMBRANE SUPPORTED BY FOLDED HINGES	282
<i>Marius PUSTAN, Cristian DUDESCU, Corina BIRLEANU</i>	

CHARACTERIZATION OF CAPACITIVE MICROMACHINED ULTRASONIC TRANSDUCERS	288
<i>Joseph LARDIÈS, Fayçal BELLARED, Brahim BELGACEM, Gilles BOURBON, Patrice Le MOAL, Vincent WALTER</i>	

ELECTROSTATICALLY-INDUCED MODAL CROSSTALK PHENOMENA IN RESONANT MEMS SENSORS	294
<i>Alexis BRENES, Jerome JUILLARD, Filipe VINCI dos SANTOS</i>	

SIMULATION AND CHARACTERIZATION OF DYNAMIC CONTACT IN A MEMS PASSIVE VIBRATION THRESHOLD SENSOR	298
<i>Zhuoqing YANG, Wenguo CHEN, Guifu DING, Yan WANG, Hong WANG, Xiaolin ZHAO</i>	
SESSION T5: PROCESS, ASSEMBLY AND PACKAGING	
FABRICATING SMALL-SCALE POLYMERIC STRUCTURES FOR IN-VITRO DIAGNOSIS VIA DAILY-USE TOOLS	303
<i>Chung-Yao YANG, Chen-Meng KUAN, Chao-Min CHENG, J. Andrew YEH, J. Andrew YEH,</i>	
CRESCENT SHAPED PATTERNS FOR SELF-ALIGNMENT OF MICRO-PARTS: PART II – SELF-ALIGNMENT DEMONSTRATION AND CONDUCTIVITY EVALUATION	308
<i>Mengqing LIU, Dong F. WANG, Shouhei SHIGA, Dong F. WANG, Takao ISHIDA, Ryutaro MAEDA</i>	
BOND STRENGTH OF CONDUCTIVE SI-SI FUSION BONDED SEALS	312
<i>Kari SCHJØLBERG-HENRIKSEN, Lars Geir Whist TVEDT, Sigurd MOE, Erik POPPE, Dag WANG, Stein Are GJELSTAD, Christopher MØRK, Kristin IMENES</i>	
POLYMER MEMS FABRICATION PROCESS FOR SYSTEM-ON-CHIP SELF-ASSEMBLED MILLIMETER-WAVE ANTENNAS	318
<i>Sae-Won LEE, Ying CHEN, Rodney G. VAUGHAN, Meenakshinathan PARAMESWARAN, Diane TITZ, Fabien FERRERO, Cyril LUXEY, Alireza MAHANFAR</i>	
PACKAGING OF A MULTIFUNCTIONAL IMPLANTABLE HEART MONITORING DEVICE	322
<i>Anh-Tuan T. NGUYEN, Fjodors TJULKINS, Knut E. AASMUNDTVEIT, Nils HOIVIK, Lars HOFF, Ole-Johannes GRYMYR, Per Steinar HALVORSEN, Kristin IMENES</i>	
SESSION T6: DESIGN AND SIMULATION	
CONSTRUCTING HIGH-POWER LED LAMP MODEL TO EVALUATE DIFFERENT HEAT DISSIPATION MECHANISM DESIGN	328
<i>Ming-Tzer LIN, Yi-Sheng LIAO, F-C HSU, Y-T WANG, Han KAO, De-Shau HUANG</i>	
STATISTICAL STRENGTH INVESTIGATION OF POLY-SILICON MEMBRANES USING MICROSCOPIC LOADING TESTS AND NUMERICAL SIMULATION	332
<i>John BRUECKNER, Ellen AUERSWALD, Rainer DUDEK, Bernhard WUNDERLE, Bernd MICHEL, Sven RZEPKA, Alfons DEHÉ</i>	
THE ROBUSTNESS OF AN ALGORITHM APPLIED IN WAFER-LEVEL MATERIAL PROPERTY EXTRACTION	338
<i>Wan-Chun CHUANG, Yu-Ru LIN</i>	
QUANTIFICATION OF THE PILE-UP EFFECT FOR IMPROVING INVERSE MECHANICAL ANALYSIS BY MEANS OF NANOINDENTATION	343
<i>Romain PETRE-BORDENAVE, Cedric SEGUINEAU, Lucie THEBAUT, Jean-Michel DESMARRES, Joël ALEXIS</i>	
ACCURATE 3D RECONSTRUCTION OF SILICON MICRO/NANOSTRUCTURES, BASED ON HIGH RESOLUTION FIB-SEM TOMOGRAPHY	347
<i>David ABI SAAB, Philippe BASSET Fr MARTY, Dan ANGELESCU, Matthew TRAWICK</i>	



2-4 April 2014, Cannes Côte d'Azur, France

SESSION T7: MATERIALS, FABRICATION AND MANUFACTURING

DRY-FILM RESIST TECHNOLOGY FOR VERSATILE TSV FABRICATION FOR MEMS, TESTED ON BLIND DUMMY TSVS	351
<i>Nicolas LIETAER, Anand SUMMANWAR, Sara Rund HERUM, Leny NAZARENO</i>	
SELF-POLARIZED PYROELECTRIC LITAO3 THIN FILMS	356
<i>Alexandra GARRAUD Salman NADAR, Alain GIANI, Philippe COMBETTE</i>	
CONTROLLABLE S-DOPING OF GRAPHENE THROUGH ANNEALING WITH HYDROGEN SULFIDE.....	360
<i>Chen LIANG, Yi WANG, Yuelin WANG, Tie LI</i>	
PIEZOELECTRIC PVDF FILMS SWITCH TO ACTIVATE EVENT-DRIVEN SYSTEM FOR CHICKEN HEALTH MONITORING.....	364
<i>Hiroumi NOGAMI, Hironao OKADA, Seiichi TAKAMATSU , Takeshi KOBAYASHI, Ryutaro MAEDA, Toshihiro ITOH</i>	
MONITORING OF PARTICLE DEPOSITION IN CLEANROOMS : STATE-OF-THE-ART.....	368
<i>Nina MENANT, Delphine FAYE, Pascal NOUET, Xavier LAFONTAN, Djemel LELLOUCHI</i>	
INDEX	373