



**POROUS SEMICONDUCTORS –
SCIENCE AND TECHNOLOGY
PSST 2022**

PROGRAM

Lido di Camaiore (Lucca), Italy, March 27th – April 1st 2022

PSST 2022 PROGRAM AT A GLANCE

SUNDAY 27.03.2022	16:00-18:30	INTRODUCTORY SHORT COURSES (TUTORIALS)
	18:30-20:00	WELCOME PARTY
	20:00-21:40	DINNER

MONDAY 28.03.2022	9:20-11:00	Electrochemical Etching and Metal-Assisted Etching 1
	11:00-11:20	COFFEE BREAK
	11:20-12:40	Electrochemical Etching and Metal-Assisted Etching 2
	12:40-14:00	LUNCH
	14:00-15:40	Micro Photonics and Electronics 1
	15:40-16:00	COFFEE BREAK
	16:00-17:20	Micro Photonics and Electronics 2
	17:20-17:40	Talk of the Day Voting
	18:40-21:40	Poster Session and DINNER BUFFET

TUESDAY 29.03.2022	9:00-11:00	Novel Preparation Techniques and Structures & Emerging Applications 1
	11:00-11:20	COFFEE BREAK
	11:20-12:40	Novel Preparation Techniques and Structures & Emerging Applications 2
	12:40-14:00	LUNCH
	14:00-15:40	Surface Chemistry and Pore Filling 1
	15:40-16:00	COFFEE BREAK
	16:00-17:15	Surface Chemistry and Pore Filling 2
	17:20-17:40	Talk of the Day Voting

	18:00-19:00	Canham Award
	19:00-20:00	Free Time
	20:00-21:40	DINNER

WEDNESDAY 30.03.2022	9:00-11:00	Sensors and Biosensors 1
	11:00-11:20	COFFEE BREAK
	11:20-13:00	Sensors and Biosensors 2
	13:00-13:20	Talk of the Day Voting
	13:20-14:40	CONFERENCE PHOTO & LUNCH
	14:40-20:00	HALF-DAY VISIT TO HISTORIC TOWN OF PISA
	20:00-21:40	DINNER

THURSDAY 31.03.2022	9:00-11:00	Medical Applications, Imaging and Therapy 1
	11:00-11:20	COFFEE BREAK
	11:20-12:40	Medical Applications, Imaging and Therapy 2
	12:40-14:00	LUNCH
	14:00-15:40	Medical Applications, Imaging and Therapy 3
	15:40-16:00	COFFEE BREAK
	16:00-17:40	Energy Storage and Conversion
	17:40-18:00	Talk of the Day, Best Poster, and Best Talk of the Conference Voting
	18:00-20:00	Free Time
	20:00-23:00	GALA DINNER, PRIZES AND CLOSING

FRIDAY 01.04.2022	08:00-20:00	OPTIONAL DAY TOUR TO FLORENCE
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SUNDAY 27.03.2022

	INTRODUCTORY SHORT COURSES (TUTORIALS) Chairing: GIUSEPPE BARILLARO AND MICHAEL J. SAILOR
16:00-16:30	(1) FABRICATION OF POROUS SEMICONDUCTORS LLUIS MARSAL
16:30-17:00	(2) COATING AND FILLING OF POROUS SEMICONDUCTORS LIONEL SANTINACCI
17:00-17:30	(3) SENSOR APPLICATIONS OF POROUS SEMICONDUCTORS ESTER SEGAL
17:30-18:00	(4) BIOMEDICAL APPLICATIONS OF POROUS SEMICONDUCTORS NICO VOELCKER
18:00-18:30	(5) INDUSTRIAL TRANSLATION OF POROUS SEMICONDUCTORS LEIGH CANHAM
18:30-20:00	WELCOME PARTY at UNA ESPERIENZE HOTEL
20:00-21:40	DINNER at UNA ESPERIENZE HOTEL

END of the DAY

MONDAY 28.03.2022

Time	Presentation Number	TITLE AUTHORS
09:00-9:20		PSST 2022 CONFERENCE OPENING Chairing: FREDERIQUE CUNIN, GIUSEPPE BARILLARO, THIERRY DJENIZIAN, LLUÍS F. MARSAL, MICHAEL SAILOR AND NICO VOELCKER
Session 01 – Electrochemical and Metal-Assisted Chemical Etching 1 Chairing: J. COFFER AND L.F. MARSAL		
09:20-09:55	01-I-01/ 41	INJECTION METAL-ASSISTED CATALYTIC ETCHING (MACE) OF Si POWDER: THE DISCOVERY OF LOW-LOAD MACE AND THE OPTIMIZATION OF HIGH-LOAD MACE K. W. KOLASINSKI, K. TAMAROV, J. SWANSON, B. UNGER, A. ERNST, M. AINDOW, V.-P. LEHTO AND J. RIIKONEN (<i>INVITED</i>)
10:00-10:15	01-O-02/ 147	MESOPOROUS STAMP MATERIALS FOR LARGE-AREA ELECTROCHEMICAL NANOIMPRINTING OF SILICON-BASED WAVEGUIDES A. SHARSNIOU, S. NIAUZORAU, J. MARKOVSKI, N. KUBLIK, M. PUCKETT, N. KRUEGER AND <u>B. AZEREDO</u>
10:20-10:35	01-O-03/ 88	MORPHOLOGICAL VARIATIONS OF ANODIC TiO₂ NANOTUBE LAYERS <u>J. M. MACAK</u> , M. MOTOLA, D. BEKETOVA AND H. SOPHA
10:40-10:55	01-O-04/ 56	THERMAL CONDUCTIVITY OF POROUS SILICON NANOWIRES OBTAINED BY METAL ASSISTED CHEMICAL ETCHING P. FERRANDO-VILLALBA, N. DE LEO, G. G. DALKIRANIS, E. CARA, A. F. LOPEANDIA, L. L. ABAD, R. RURALI, X. CARTOIXÀ, Z. SAGHI, M. JACOB, N. GAMBACORTI, <u>L. BOARINO</u> AND J. RODRÍGUEZ-VIEJO
11:00-11:20		COFFEE BREAK
Session 01 – Electrochemical and Metal-Assisted Chemical Etching 2 Chairing: L. BOARINO AND S. BASTIDE		

11:20-11:35	01-O-05/ 138	FABRICATION OF MULTIPLE POROUS SILICON ELEMENTS WITH VARYING MORPHOLOGIES USING A SINGLE ANODIZATION STEP <u>D. SILVA DE VASCONCELLOS</u> , K. HAJDU, E. IMBERNON, D. BOURRIER AND T. LEICHLE
11:40-11:55	01-O-06/ 16	CHARACTERIZATION OF POROUS STRUCTURES GENERATED BY BIPOLAR ELECTROCHEMICAL ETCHING ON HIGHLY P-DOPED GE(100) 4" – WAFERS <u>W. SCHREIBER</u> AND S. JANZ
12:00-12:15	01-O-07/ 162	TUNING MESOPOROUS GERMANIUM BILAYERS FORMATION BY ELECTROCHEMICAL ETCHING <u>L. MOUCHEL</u> , J. A. ZAPATA, B. ILAHI AND A. BOUCHERIF
12:20-12:35	01-O-08/ 105	UNDERSTANDING THE PASSIVATION IN SILICON-AIR BATTERIES WITH ALKALINE ELECTROLYTES R. SCHALINSKI, S. L. SCHWEIZER, AND <u>RALF. B. WEHRSPHON</u>
12:40-14:00	LUNCH at UNA ESPERIENZE HOTEL	
<p>Session 02 – Micro Photonics and Electronics 1</p> <p>Chairing: L. STRAMBINI AND G. GAUTIER</p>		
14:00-14:35	02-I-01/ 47	ADDITIVE MANUFACTURING OF 3D MICROSCALE GRADIENT REFRACTIVE INDEX POLYMER OPTICAL ELEMENTS AND WAVEGUIDES IN POROUS SILICON AND SILICA P. V. BRAUN (<i>INVITED</i>)
14:40-14:55	02-O-02/ 117	NANOIMPRINTING REFRACTIVE INDEX USING MESOPOROUS SILICON SUBSTRATES J. C. PEREZ, T. H. TALUKDAR AND <u>J. D. RYCKMAN</u>
15:00-15:15	02-O-03/ 24	RESISTIVE AND LUMINESCENCE SWITCHING OF POROUS SILICON LIGHT EMITTING MEMRISTORS <u>V. TORRES-COSTA</u> , E. MÄKILÄ AND J. SALONEN
15:20-15:35	02-O-04/ 153	LASING FROM POROUS SILICON RESONANT MICROCAVITIES INFILTRATED WITH POLYFLUORENE V. ROBBIANO, G. M. PATERNÒ, <u>A. A. LA MATTINA</u> , S. G. MOTTI, G. LANZANI, F. SCOTOGNELLA AND G. BARILLARO
15:40-16:00	COFFEE BREAK	

Session 02 – Micro Photonics and Electronics 2

Chairing: L. CANHAM AND N. DE LEO

16:00-16:15	02-O-05/ 152	RECORD CAPACITANCE DENSITY FROM THREE-DIMENSIONAL SILICON-BASED CAPACITOR: TOWARD EFFECTIVE ON-CHIP ENERGY STORAGE L. STRAMBINI, A. PAGHI, S. MARIANI, A. SOOD, J. KALLIOMÄKI, P. JÄRVINEN, F. TOIA, M. SCURATI, M. MORELLI, A. LAMPERTI AND G. BARILLARO
16:20-16:35	02-O-06/ 176	POST-PROCESS CMOS AND BACKSIDE POROSIFICATION OF STANDARD RESISTIVITY SILICON SUBSTRATE FOR ENHANCED RF PERFORMANCE R. TUYAERTS, Q. VAN OVERMEERE, A. FAVACHE, C. WHYTE FERREIRA, G. SCHEEN AND J-P. RASKIN
16:40-16:55	02-O-07/ 165	TITANIUM NITRIDE/POROUS SILICON ELECTRODE FOR MICROSUPERCAPACITOR APPLICATIONS R. DAILLEAU, T. DEFFORGE, F. TRAN VAN AND G. GAUTIER
17:00-17:15	02-O-08/ 91	PLANAR-TYPE TRIAC WITH POROUS SILICON-BASED PERIPHERY STRUCTURE S. AUDIERE, Y. BUVAT, T. DEFFORGE, B. MORILLON, E. COLLARD, J. BILLOUE AND G. GAUTIER
17:20-17:40	Talk of the day voting	

POSTER Session and Dinner Buffet

Chairing: G. MULA, H. SANTOS, F. GEOBALDO, H. SOHN, J.M. ZUIDEMA, C. PACHOLSKI, AND L. SANTINACCI

18:40-21:40	01 – Electrochemical and Metal-Assisted Chemical Etching (2) 02 – Novel Preparation Techniques and Structures (6) 03 – Surface Chemistry and Pore Filling (5) 04 – Micro Photonics and Luminescence (6) 05 – Micro Systems and Electronics (2) 06 – Medical Applications, Imaging and Therapy (4) 07 – Energy Storage and Conversion (2) 08 – Sensors and Biosensors (15) 09 – Emerging Applications (1)
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Topic 01 (Posters) – Electrochemical and Metal-Assisted Chemical Etching	
01-P-01/ 150	ELECTROCHEMICAL MICROMACHINING OF HOLLOW-CORE SILICA MICRO-BUBBLE ARRAYS ON A SILICON CHIP FOR PERSPECTIVE ULTRA-SENSITIVE OPTICAL SENSING Z. CHEN, <u>L. STRAMBINI</u> AND G. BARILLARO
01-P-02/ 163	STUDY OF MESOPOROUS GERMANIUM POROSIFICATION BY FAST BIPOLAR ELECTROCHEMICAL ETCHING USING STATISTICAL DESIGN OF EXPERIMENTS <u>L. DEMOULIN</u> , J. A. ZAPATA, R. M. AZIZIYAN, A. BOUCHERIF AND R. GOSSELIN
Topic 02 (Posters) – Novel Preparation Techniques and Structures	
02-P-01/ 102	BIOGENIC NANO-SILICON CARBIDE FUNCTIONALIZED WITH BISPHOSPHONATES FOR ADSORPTION OF MANGANESE <u>O. HALUSKA</u> , A. RAHMANI, A. SALAMI, P. TURHANEN, J. VEPSÄLÄINEN, R. LAPPALAINEN, V.-P. LEHTO AND J. RIIKONEN
02-P-02/ 104	HIGH ASPECT RATIO TIO₂ NANOTUBE LAYERS <u>M. ALIJANI</u> , H. SOPHA, M. MOTOLA, S. NG AND J. M. MACAK
02-P-03/ 3	HYBRID PLASMONIC/PHOTONIC CRYSTALS FOR OPTICAL DETECTION OF BACTERIAL CONTAMINANTS <u>G. M. PATERNÒ</u> , L. MOSCARDI, S. DONINI, D. ARIODANTI, I. KRIEGEL, E. PARISINI, G. LANZANI AND F. SCOTOGNELLA
02-P-04/ 6	POROUS SILICON BASED ULTRA-BAND INFRARED ANTIREFLECTIVE AND LIGHT ABSORBING COATING S. KESHAVARZI, <u>A. KOVACS</u> AND U. MESCHERER
02-P-05/ 46	FROM POROUS GERMANIUM TO VERTICALLY ALIGNED NANORODS: A NEW APPROACH TO ENABLE HIGH PERFORMANCE ON-CHIP ANODES <u>L. DEMOULIN</u> , M. R. AZIZIYAN, D. MACHON, R. ARES AND A. BOUCHERIF
02-P-06/ 173	RECENT ADVANCEMENTS IN MORPHOLOGIES OF TIO₂ NANOTUBE LAYERS <u>M. SEPÚLVEDA</u> , I. SALDAN, H. SOPHA AND J. M. MACAK
Topic 03 (Posters) – Surface Chemistry and Pore Filling	
03-P-01/ 81	APTAMER-BASED BIOSENSOR FOR TARGETING BIOMARKERS IN THE DIGESTIVE TRACT FLUIDS S. ARSHAVSKY-GRAHAM, R. SALAMA, <u>L. DAHAN</u> , N. MASSAD-IVANIR AND E. SEGAL
03-P-02/ 113	HYBRID THERMOELECTRIC MATERIALS BASED ON MESOPOROUS SILICON FILLED WITH POLY-3,4-ETHYLENDIOXYTHIOPHEN (PEDOT) POLYMER

	<u>M. MAY</u> AND P. HUBER
03-P-03/ 124	POLYPYRROLE DEPOSITION ON NANOPOROUS SILICON SURFACE FUNCTIONALIZED WITH RAB7 PROTEIN. TOWARD SURFACE IMPRINTING FOR HIGH-SENSITIVITY OPTICAL SENSING <u>T. DI GIULIO</u> , C. MALITESTA, M. DE LUCA, C. BUCCI, S. MARIANI, L. STRAMBINI, G. BARILLARO AND E. MAZZOTTA
03-P-04/ 54	INVESTIGATION OF THERMALLY INDUCED POROUS GERMANIUM TRANSFORMATION FOR THE GROWTH OF III-V SOLAR CELLS ON POROUS GE <u>A. B. POUNGOUE MBEUNMI</u> , R. ARVINTE, A. DUPUY, S. SAUZE, R. ARÈS, S. FAFARD AND A. BOUCHERIF
03-P-05/ 95	POROUS SILICON DERIVATIZATION BY AN ALLYL-GLUCOSE FOR PROTEIN HOSTING <u>R. MORETTA</u> , L. SERPICO, M. DE NISCO, F. CERMOLA, S. PEDATELLA, I. REA AND L. DE STEFANO
Topic 04 (Posters) – Micro Photonics and Luminescence	
04-P-01/ 119	HIGH FIGURE OF MERIT INTERFEROMETRIC SENSORS: EXCEEDING THE SENSITIVITY OF BULK POROUS SILICON VIA WAVEGUIDE DISPERSION <u>T. H. TALUKDAR</u> , I. KRAVCHENKO AND J. D. RYCKMAN
04-P-02/ 25	ACCURATE DETERMINATION OF THE OPTICAL CONSTANTS OF POROUS SILICON FROM SELF-STANDING LAYERS R. RAMADAN, <u>V. TORRES-COSTA</u> AND R. J. MARTÍN-PALMA
04-P-03/ 50	DESIGN OF POROUS SILICON MICRODEVICES WITH SPECIFIC OPTOACOUSTIC RESPONSES <u>L. FORZANI</u> , C. G.MENDEZ, R. URTEAGA AND A. E. HUESPE
04-P-04/ 53	MORPHOLOGICAL, STOICHIOMETRIC, AND PHOTOPHYSICAL CONTROL OF PEROVSKITES USING POROUS SILICON NANOTUBES R. GONZALEZ-RODRIGUEZ AND <u>J. L. COFFER</u>
04-P-05/ 160	POROSITY AND REFRACTIVE INDEX DETERMINATION BY FRACTAL ANALYSIS OF POROUS FILMS I. SARDAÑA-ORTEGA AND <u>V. TORRES-COSTA</u>
04-P-06/ 161	POROUS GERMANIUM TUNED OPTICAL FILTERS BY OBLIQUE ANGLE EVAPORATION I. SARDAÑA-ORTEGA AND <u>V. TORRES-COSTA</u>
Topic 05 (Posters) – Micro Systems and Electronics	
05-P-01/ 161	BOOSTING STATIC AND DYNAMIC PERFORMANCE OF INTEGRATED POWER DIODES USING PERIPHERAL NANOSTRUCTURED POROUS SILICON

145	<u>A. PAGHI</u> , L. STRAMBINI, M. SAMBI, M. MARCHESI, M. MORELLI AND GIUSEPPE BARILLARO
05-P-02/ 80	MAGNETIC CHARACTERIZATION OF POROUS SILICON – COBALT NANOPARTICLE COMPOSITE FOR RF DEVICE APPLICATION <u>T. DEFFORGE</u> , P. GRANITZER, J. BILLOUE, B. LE BORGNE, G. GAUTIER AND K. RUMPF
Topic 06 (Posters) – Medical Applications, Imaging and Therapy	
06-P-01/ 69	WATER SOLUBLE SILICON QUANTUM DOTS AS DRUG DELIVERY MATERIALS <u>K. KOH</u> , D. JUNG AND H. SOHN
06-P-02/ 141	ULTRASOUND-ASSISTED DRUG RELEASE FROM BIODEGRADABLE POROUS SILICON NANOPARTICLES <u>A. SVIRIDOV</u> , U. TSURIKOVA, D. MAKSUTOVA, M. GONGALSKY, V. EGOSHINA, V. ANDREEV, A. KUDRYAVTSEV AND L. OSMINKINA
06-P-03/ 103	SELECTED DESIGNS OF POROUS SILICON-POLYCAPROLACTONE COMPOSITE SCAFFOLDS: DRUG DELIVERY AND IN VITRO INTERACTIONS <u>N. K. BODIFORD</u> , S. J. P. MCINNES, N. SCHURTLEFF, N. H. VOELCKER AND J. L. COFFER
06-P-04/ 158	EFFICACY OF TARGETED POROUS SI NANOPARTICLES DELIVERING VEGF-SIRNA TO A RABBIT MODEL OF RETINAL ANGIOGENESIS <u>J. GRONDEK</u> , K. HUFFMAN, M. CAVICHINI, A. WARTER, F. KALAW, L. CHENG, E. LEE, R. FAN, W. FREEMAN AND M. SAILOR
Topic 07 (Posters) – Energy Storage and Conversion	
07-P-01/ 122	POROUS GERMANIUM AS ANODE MATERIAL FOR BATTERIES A. N. SOSA, <u>I. GONZÁLEZ</u> , A. TREJO AND M. CRUZ- IRISSON
07-P-02/ 174	THE EMPIR PROJECT NANOWIRES: HIGH THROUGHPUT METROLOGY OF ENERGY HARVESTING DEVICES BASED ON (POROUS SILICON) NANOWIRES Z. LI, F. PIQUEMAL, R. KOOPS, P. KLAPETEK, L. BOARINO, <u>N. DE LEO</u> , E. CARA, U. BRAND, N. GOGNEAU, J. LARSEN, J. FIDELUS, H. SAVIN, M. CAIN, G. CROSS, C. SCHWALB, E. PEINER, T. GOTSZALK, J. RODRÍGUEZ VIEJO AND D. PELLERIN
Topic 08 (Posters) – Sensors and Biosensors	
08-P-01/ 144	LAYER-BY-LAYER NANO-ASSEMBLY OF CHARGED POLYELECTROLYTES ENGINEERED WITH BIORECEPTORS FOR HIGH-SENSITIVITY LABEL-FREE BIOSENSING WITH POROUS SILICON <u>S. MARIANI</u> , V. ROBBIANO, L. STRAMBINI, A. DEBRASSI, G. EGRI, L. DÄHNE AND G. BARILLARO

08-P-02/ 76	A NANOSTRUCTURED ZNO-BASED BIOSENSOR FOR CHRONIC LYMPHATIC LEUKEMIA DIAGNOSIS T. CRISCI, G. CHIANESE, M. CASALINO, M. GIOFFRÈ, M. TERRACCIANO, N. BORBONE, G. OLIVIERO, I. REA AND L. DE STEFANO
08-P-03/ 32	ENHANCING THE SENSITIVITY OF SURFACE PLASMON RESONANCE SENSORS USING POROUS SILICON R. F. BALDERAS-VALADEZ AND C. PACHOLSKI
08-P-04/ 65	ANTIFUNGAL SUSCEPTIBILITY TESTING OF ASPERGILLUS NIGER ON SILICON MICROWELLS BY INTENSITY-BASED REFLECTOMETRIC INTERFERENCE SPECTROSCOPY C. HEUER, H. LEONARD, N. NITZAN, A. LAVY-ALPEROVITCH, N. MASSAD-IVANIR, T. SCHEPER AND E. SEGAL
08-P-05/ 14	SILVER-DECORATED PHOTOLUMINESCENT POROUS SILICON SENSORS FOR HF VAPOUR DETECTION R. VERCAUTEREN, A. CHAIX, L. A. FRANCIS AND M. SAILOR
08-P-06/ 125	LABEL-FREE SERS ANALYSIS OF LIFE CYCLE IN ESCHERICHIA COLI AND STAPHYLOCOCCUS EPIDERMIDIS STRAINS N. PACCOTTI, F. BOSCHETTO, S. HORIGUCHI, E. MARIN, A. CHIADÒ, C. NOVARA, F. GEOBALDO, F. GIORGIS AND G. PEZZOTTI
08-P-07/ 92	MULTIPLEXED BIOMARKER DETECTION WITH POROUS SILICON-BASED APTASENSORS IN 3D-PRINTED MICROFLUIDIC DEVICES S. ARSHAVSKY-GRAHAM, K. AWAWDEH, M. MASSAD-IVANIR, J. BAHNEMANN AND E. SEGAL
08-P-08/ 75	GRAPHENE OXIDE-POROUS SILICON BASED BIOSENSOR FOR TEMPESTIVE DIAGNOSIS OF BRUGADA SYNDROME R. MORETTA, C. SCHIATTARELLA, M. TERRACCIANO, N. BORBONE, G. OLIVIERO, I. REA AND L. DE STEFANO
08-P-09/ 38	COBINAMIDE-BASED POROUS SILICON OPTICAL SENSOR FOR THE SELECTIVE COLLECTION AND DETECTION OF HYDROGEN CYANIDE S. VIJAYAKUMAR, A. CHAIX, Y-S. LU, G. R. BOSS, M.J. SAILOR, J. S. HA, C. E. WAHL AND D. E. HUNKA
08-P-10/ 39	CARBON-STABILISED POROUS SILICON FOR ULTRASENSITIVE LABEL-FREE ELECTROCHEMICAL OLIGONUCLEOTIDE DETECTION G. CHIN, K. GUO, R. B. VASANI, N. H. VOELCKER AND B. PRIETOSIMON
08-P-11/ 49	LOW-DIMENSIONAL POROUS COMPOSITE STRUCTURE BASED ON TIO2 AND GRAPHENE OXIDE: SYNTHESIS AND CHEMICAL SENSING PROPERTIES

	<u>V. GALSTYAN</u> , A. PONZONI, I. KHOLMANOV, M. M. NATILE, A. GLISENTI, E. COMINI AND G. SBERVEGLIERI
08-P-12/ 166	FUNCTIONALIZED THERMALLY CARBONIZED RE-ETCHED NANOPOROUS SILICON FILTERS FOR ON-SITE MEASUREMENT OF LOW METAL CONCENTRATIONS IN WATER <u>A. RAHMANI</u> , T. TIIHONEN, K. TAMAROV, V.P. LEHTO AND J. RIIKONEN
08-P-13/ 169	PASSIVATED POROUS SILICON MEMBRANES FOR THE OPTICAL DETECTION OF BACTERIA THROUGH THEIR LYSATE <u>R. VERCAUTEREN</u> , C. W. FERREIRA, A. LEPRINCE, J. MAHILLON AND L.A. FRANCIS
08-P-14/ 175	SIGNAL PROCESSING TECHNIQUES TO IMPROVE SIGNAL-TO-NOISE AND LOWER THE LIMIT OF DETECTION FOR POROUS SILICON BIOSENSORS S. J. WARD, <u>R. LAYOUNI</u> , S. ARSHAVSKY-GRAHAM, E. SEGAL, S. M. WEISS
08-P-15/ 139	INVESTIGATION OF H1N1 INFLUENZA VIRUS INTERACTION WITH A POROUS LAYER OF SILICON NANOWIRES FOR SENSING APPLICATIONS <u>K.A. GONCHAR</u> , D. V. MOISEEV, I. V. BOZHEV, S. N. AGAFILUSHKINA, M. B. GONGALSKY, N. YU. SAUSHKIN, J. V. SAMSONOVA AND L. A. OSMINKINA
Topic 09 (Posters) – Emerging Applications	
09-P-01/ 167	ACCURATE DETERMINATION OF POROSITY AND PORE SIZE DISTRIBUTION FOR NANO- AND MESO-POROUS SILICON <u>S. JANZ</u> , S. LAWUNDY AND W. SCHREIBER

END of the DAY

TUESDAY 29.03.2022

Time	Presentation Number	TITLE Authors
<p>Session 03 – Novel Preparation Techniques and Structures & Emerging Applications 1</p> <p>Chairing: P. V. BRAUN AND B. AZEREDO</p>		
09:00-09:35	03-I-01/ 146	<p>PHOTONICALLY-PLASMONICALLY ENCODED SILICONE LENSES FOR SMARTPHONE-BASED MICROSCOPY AND IMAGING</p> <p><u>S. MARIANI</u>, M. CORSI, V. ROBBIANO, R. IGLIO, A. A. LA MATTINA, P. NADIMI, J. WANG, B. KIM, T. KUMERIA, M. J. SAILOR AND G. BARILLARO (<i>INVITED</i>)</p>
09:40-9:55	03-O-02/ 116	<p>USING POROUS SILICON TEMPLATE PROPERTIES TO DIRECT LEAD HALIDE PEROVSKITE PHOTOPHYSICS</p> <p>V. C. P. DA COSTA, R. GONZALEZ-RODRIGUEZ, G. DELPORT, K. FROHNA, S. D. STRANKS, L. T. CANHAM AND <u>J. L. COFFER</u></p>
10:00-10:15	03-O-03/ 23	<p>STRUCTURAL ENGINEERING OF MAGNETIC ALUMINA NANOTUBES</p> <p><u>A. ROJAS</u>, J. T. DOMAGALSKI, E. XIFRE-PEREZ, J. FERRE-BORULL AND L. F. MARSAL</p>
10:20-10:35	03-O-04/ 40	<p>SCALE-UP OF ANODIC TiO₂ NANOTUBE LAYERS</p> <p><u>H. SOPHA</u>, M. MOTOLA, S. WOON NG AND J. M. MACAK</p>
10:40-10:55	03-O-05/ 37	<p>POROUS BiVO₄-BASED PHOTOANODES FOR PHOTOCATALYSIS IN ORGANIC MEDIA</p> <p><u>N.K. MCMILLAN</u>, M. PURVIS, D. LOPEZ, G. LEEM AND B. D. SHERMAN</p>
11:00-11:20	COFFEE BREAK	
<p>Session 03 – Novel Preparation Techniques and Structures & Emerging Applications 2</p> <p>Chairing: L. STRAMBINI AND G. MULA</p>		

11:20-11:35	03-O-06/ 66	PREPARATION OF HYDROPHOBIC-OLEOPHILIC MATERIALS BASED ON NANOPOROUS ANODIC ALUMINA <u>A. ROJAS</u> , L. K. ACOSTA, P. FORMENTIN AND L. F. MARSAL
11:40-11:55	03-O-07/ 132	HIERARCHICAL NANOSTRUCTURING OF POROUS SILICON WITH REGENERATIVE ELECTROLESS ETCHING FOR BIOMEDICAL APPLICATIONS E. MÄKILÄ, A.-M. ANTON-WILLMORE, T. TEESALU, H. YU, M. AINDOW, L. T. CANHAM, <u>K. W. KOLASINSKI</u> AND J. SALONEN
12:00-12:15	03-O-08/ 5	PIEZOELECTROLYTIC ACTUATION IN POROUS SILICON <u>M. BRINKER</u> , G. DITTRICH, C. RICHERT, P. LAKNER, T. KREKELER, T. F. KELLER, N. HUBER AND P. HUBER
12:20-12:35	03-O-09/ 63	SILICON NANOTUBE ARRAYS: A NOVEL INTRACELLULAR DELIVERY PLATFORM <u>S. ASLANOGLU</u> , Y. CHEN, T. MURAYAMA, G. GERVINSKAS, J. TIAN, Y. MORIKAWA, K. SUU, R. ELNATHAN AND N. H. VOELCKER
12:40-14:00	LUNCH at UNA ESPERIENZE HOTEL	
<p>Session 04 – Surface Chemistry and Pore Filling 1</p> <p>Chairing: L. SANTINACCI AND K. W. KOLASINSKI</p>		
14:00-14:35	04-I-01/ 177	ATOMIC LAYER DEPOSITION FOR SURFACE COATING AND FILLING OF VARIOUS 1D NANOMATERIALS R. ZAZPE, H. SOPHA, S.M. THALLURI, M. RIHOVA, L. HROMADKO, J. RODRIGUEZ PEREIRA, <u>J. M. MACAK</u> (INVITED)
14:40-14:55	04-O-02/ 26	REFLECTANCE STUDY ON INFILTRATION OF RHODAMINE DYE INSIDE NANOPOROUS ANODIC ALUMINA GRADIENT-INDEX FILTERS <u>P. KAPRUWAN</u> , J. FERRÉ-BORRULL AND L. F. MARSAL
15:00-15:15	04-O-03/ 42	MESOPOROUS SILICON FILLED WITH FUNCTIONALIZED MOLECULES FOR HYBRID THERMOELECTRICS <u>N. GOSTKOWSKA-LEKNER</u> , D. KOJDA, D. WALLACHER, K. HABICHT AND T. HOFMANN
15:20-15:35	04-O-04/ 149	MAGNETIC NANOSPHERES WITHIN POROUS SILICON LIGHT EMITTING MICROPARTICLES E. CHISTÈ, <u>A. SAMBUGARO</u> , G. ISCHIA, M. GEROSA, P. MARZOLA, M. SCARPA AND N. DALDOSSO
15:40-16:00	COFFEE BREAK	

Session 04 – Surface Chemistry and Pore Filling 2

Chairing: J. MACAK AND F. CUNIN

16:00-16:15	04-O-05/ 33	mRNA DELIVERY WITH POROUS SILICON NANONEEDLES AND NANOPARTICLES C. SPITERI, V. CAPRETTINI, D. MARTELLA, M. KAASALAINEN, E. MAKILA, J. SALONEN AND C. CHIAPPINI
16:20-16:35	04-O-06/ 159	HARNESSING THE CHEMISTRY OF MESOPOROUS SILICON TO PREPARE “ARMOR-CLAD” ENZYMES WITH IMPROVED CATALYTIC PERFORMANCE Y.-S. LU, W. VUGS, L. BIEWENGA, Z. ZHOU, S. VIJAYAKUMAR, M. MERKX AND M. J. SAILOR
16:40-16:55	04-O-07/ 95	DESIGN OF ENGINEERED POROUS BIOSILICA NANOPARTICLES WITH ENHANCED GALUNISERTIB LOADING CAPACITY FOR DRUG DELIVERY APPLICATIONS B. MIRANDA, C. TRAMONTANO, G. CHIANESE, C. FORESTIERE, I. REA, AND L. DE STEFANO
17:00-17:15	04-O-08/ 67	UNRAVELING MASS TRANSFER LIMITATIONS OF POROUS SILICON-BASED APTASENSORS FOR PROTEIN DETECTION S. ARSHAVSKY-GRAHAM, E. BOYKO, R. SALAMA, S. ACKERMAN, T. SCHEPER, M. BERCOVICI AND E. SEGAL
17:20-17:40	Talk of the day voting	
18:00-19:00	CANHAM AWARD	AWARD LECTURE DR. MICHAEL J. SAILOR, UNIVERSITY OF CALIFORNIA, SAN DIEGO (USA)
19:00-20:00	Free Time	
20:00-21:40	DINNER	

END of the DAY

WEDNESDAY 30.03.2022

Time	Presentation Number	TITLE Authors
<p>Session 05 – Sensors and Biosensors 1</p> <p>Chairing: L. DE STEFANO AND C. PACHOLSKI</p>		
09:00-09:35	05-I-01/ 114	<p>POROUS SILICON OPTICAL BIOSENSOR USING PEPTIDE-BASED CAPTURE AGENT</p> <p><u>R. LAYOUNI</u>, T. CAO, P. E. LAIBINIS, M. B. COPPOCK AND S. M. WEISS (<i>INVITED</i>)</p>
09:40-9:55	05-O-02/ 97	<p>LAYER-BY-LAYER GOLD NANOPARTICLE DECORATION OF POROUS SILICON FOR INTERFEROMETRIC AND HYBRID PHOTONIC/PLASMONIC (BIO)SENSING</p> <p><u>A. PAGHI</u>, S. MARIANI, A. A. LA MATTINA, A. DEBRASSI, L. DÄHNE AND G. BARILLARO</p>
10:00-10:15	05-O-03/ 2	<p>CARBON-STABILIZED POROUS SILICON AS ELECTROCHEMICAL SENSING PLATFORM</p> <p><u>M. ALBA</u>, K. GUO, R. J. TOH, A. SHARMA, E. ÁLVAREZ DE EULATE, T. R. GENGENBACH, X. CETÓ, N. H. VOELCKER AND B. PRIETO-SIMON</p>
10:20-10:35	05-O-04/ 120	<p>HYPERCHROMATIC STRUCTURAL COLOR: PERCEPTUALLY ENHANCED BIOSENSING BY THE NAKED EYE OR SMARTPHONE</p> <p>T. H. TALUKDAR, B. MCCOY, S. K. TIMMINS, T. KHAN AND <u>J. D. RYCKMAN</u></p>
10:40-10:55	05-O-05/ 123	<p>APTAMER BASED DETECTION OF MYCOTOXINS BY SERS-ACTIVE AG-COATED POROUS SILICON-PDMS MICROFLUIDIC DEVICES</p> <p><u>C. NOVARA</u>, A. CHIADO', N. PACCOTTI, T. ASAI, G. PEZZOTTI, P. RIVOLO, F. GEOBALDO, F. GIORGIS</p>
11:00-11:20	COFFEE BREAK	
<p>Session 05 – Sensors and Biosensors 2</p> <p>Chairing: E. SEGAL AND B. PRIETO-SIMON</p>		

11:20-11:35	05-O-06/ 126	DIAGNOSTIC SYSTEM FOR RAPID ANTIMICROBIAL SUSCEPTIBILITY TESTING OF CLINICAL SAMPLES <u>X. JIANG</u> , T. BORKUM, H. LEONARD, C. HEUER, N. MASSAD-IVANIR, R. COLODNER, M. STRAUSS, S. HALACHMI, S. SHPRITS AND E. SEGAL
11:40-11:55	05-O-07/ 64	EARLY DETECTION OF SUBCLINICAL MASTITIS IN DAIRY COWS BASED ON FABRY-PÉROT INTERFEROMETER N. PINKER AND <u>G. SHTENBERG</u>
12:00-12:15	05-O-08/ 112	SENSING POLYMER PROPERTIES USING POROUS SILICON A. PIRA, A. AMATUCCI, E. PINNA AND <u>G. MULA</u>
12:20-12:35	05-O-09/ 35	OPTICAL SENSORS BASED ON ONE-DIMENSIONAL POROUS SILICON PHOTONIC CRYSTALS DECORATED WITH STIMULI-RESPONSIVE HYDROGEL MICROSPHERES R. F. BALDERAS VALADEZ AND <u>C. PACHOLSKI</u>
12:40-12:55	05-O-10/ 135	SERS-ACTIVE GOLD-DECORATED SILICON NANOWIRE SUBSTRATES FOR LABEL-FREE DETECTION OF BILIRUBIN A.D. KARTASHOVA, K.A. GONCHAR, D. A. CHERMOSHENTSEV, E.A. ALEKSEEVA, <u>M.B. GONGALSKY</u> , I.V. BOZHEV, S. A. DYAKOV, Z.V. SAMSONOVA AND L.A. OSMINKINA
13:00-13:20	Talk of the day voting	
13:20-14:40	CONFERENCE PHOTO followed by LUNCH at UNA ESPERIENZE HOTEL	
14:40-20:00	HALF DAY EXCURSION TO PISA HISTORICAL TOWN AND LEANING TOWER	
20:00-21:40	PLACEE DINNER	

END of the DAY

THURSDAY 31.03.2022

Time	Presentation Number	TITLE AUTHORS
Session 06 – Medical Applications, Imaging and Therapy 1 Chairing: L. T. CANHAM AND L. DE STEFANO		
09:00-09:35	06-I-01/ 58	IN VITRO DELIVERY OF SMALL INTERFERING RNA BY ONE DIMENSIONAL POROUS NANOTUBES OF SILICON N. T. LE, G. R. AKKARAJU AND <u>J. L. COFFER</u> (<i>INVITED</i>)
09:40-9:55	06-O-02/ 157	POROUS SILICON NANOPARTICLES EMBEDDED IN POLYMER NANOFIBERS RELEASE THERAPEUTICS TO ENHANCE NEURITE EXTENSION <u>J.M. ZUIDEMA</u> , C.M. DUMONT, J. WANG, J. KANG, A. BERTUCCI, L.D. SHEA AND M. J. SAILOR
10:00-10:15	06-O-03/ 94	POROUS SILICON NANONEEDLES HARVESTING OF BIOMOLECULES FROM TISSUE <u>D. A. MARTELLA</u> AND C. CHIAPPINI
10:20-10:35	06-0-05/ 172	COLISTIN LOADED POROUS SILICA NANOPARTICLES TARGETING PSEUDOMONAS AERUGINOSA INFECTED LUNG <u>S. HOSSAINI NASR</u> , S. HUSSAIN, Q. YANG, R. FAN, E. RUOSLAHTI AND M. J. SAILOR
10:40-10:55	06-O-04/ 70	OXIDIZED POROUS SILICON NANOPARTICLES COVALENT-BONDED WITH LEVOFLOXACIN IN HYDROGEL POLYMER FOR DRUG DELIVERY B. SHIN AND <u>H. SOHN</u>
11:00-11:20	COFFEE BREAK	
Session 06 – Medical Applications, Imaging and Therapy 2 Chairing: E. SEGAL AND G. GAUTIER		
11:20-11:35	06-O-06/ 71	POLY-L-LYSINE-CONJUGATED POROUS SILICON NANOPARTICLES AS LABEL-FREE LUMINESCENT PROBES FOR IN VIVO TIME-GATED IMAGING OF HYDRA VULGARIS C. SCHIATTARELLA, R. MORETTA, T. DEFFORGE, G. GAUTIER, C. TORTIGLIONE, B. DELLA VENTURA, M. TERRACCIANO, <u>L. DE STEFANO</u> , R. VELOTTA AND I. REA

11:40-11:55	06-O-07/ 156	POROUS SILICON MICROPARTICLES FOR IMMUNE ADJUVANT DELIVERY <u>A. SAMBUGARO</u> , E. CHISTÈ, M. DONINI, M. SCARPA, S. DUSI AND N. DALDOSSO
12:00-12:15	06-O-08/ 164	CELL PENETRATING PEPTIDE DECORATED-MAGNETIC POROUS SILICON NANORODS FOR GLIOBLASTOMA IMAGING AND THERAPY <u>A. CHAIX</u> , A. GRIVEAU, T. DEFFORGE, V. GRIMAL, B. LE BORGNE, G. GAUTIER AND J. EYER
12:20-12:35		
12:40-14:00	LUNCH at UNA ESPERIENZE HOTEL	
<p>Session 06 – Medical Applications, Imaging and Therapy 3</p> <p>Chairing: C. CHIAPPINI AND J. COFFER</p>		
14:00-14:35	06-I-10/ 130	2-PHOTON LIGHT ASSISTED THERAPIES WITH POROUS SILICON NANOPARTICLES E. CUETO, A. CHAIX, M. GARY-BOBO, A. MORÈRE, M. GARCIA, C. PICHON, P. MIDOUX, M. MAYNADIER, J.-O. DURAND AND <u>F. CUNIN</u> (<i>INVITED</i>)
14:40-14:55	06-O-11/ 74	OSTEOINDUCTIVE 3D PRINTED IMPLANTS FOR BONE REGENERATION <u>Y. LIN</u> , M. ROSENBERG, M. KALINA, T. CAPUCHA, K. TARABIEH, D. SHILO AND E. SEGAL
15:00-15:15	06-O-12/ 90	POROUS SILICON FOR MINERALISED TISSUE REGENERATION VIA SUSTAINED RELEASE OF GSK3 INHIBITORS <u>P. VASHISTH</u> , M. KAASALAINEN, A. A. BIRJANDI, J. PLASCEVIC, B. SABAGH, P. SHARPE AND C. CHIAPPINI
15:20-15:35	06-O-13/ 57	THE EFFECT OF DRYING TECHNIQUE AND SURFACE PRE-TREATMENT ON THE CYTOTOXICITY AND DISSOLUTION RATE OF LUMINESCENT POROUS SILICON QUANTUM DOTS IN MODEL FLUIDS AND LIVING CELLS U. A. TSURIKOVA, <u>M. B. GONGALSKY</u> , C. J. STOREY, Y. V. EVSTRATOVA, A. A. KUDRYAVTSEV, L. T. CANHAM AND L. A. OSMINKINA
15:40-16:00	COFFEE BREAK	
<p>Session 07 – Energy Storage and Conversion</p> <p>Chairing: N. H. VOELCKER AND T. DEFFORGE</p>		

16:00-16:35	07-I-01/ 118	LAST MODIFICATIONS OF TiO₂ NANOTUBES FOR HIGH PERFORMANCE LI-ION MICROBATTERIES <u>T. DJENIZIAN</u> (INVITED)
16:40-16:55	07-O-03/ 34	PHOTOELECTRO-OXIDATION OF UREA ON NANOPOROUS Fe₂O₃/Ni ELECTRODES L. REBIAI, D. MULLER-BOUVET, S. AZIMI, V. ROCHER, M. LATROCHE, C. CACHET-VIVIER AND <u>S. BASTIDE</u>
17:00-17:15	07-O-04/ 136	FUNCTIONALIZED POROUS SILICON FOR EFFICIENT WATER PHOTOOXIDATION M. E. DUFOND, G. LOGET, S. HASCHKE, J. BACHMANN, C. COZZI, G. BARILLARO AND <u>L. SANTINACCI</u>
17:20-17:35		
17:40-18:00	Talk of the Day, Best Conference Poster and Best Conference Presentation Voting	
18:00-20:00	Free Time	
20:00-23:00	GALA DINNER and PRIZES (Celebration at UNA ESPERIENZE HOTEL– Lido di Camaiore)	

END of the DAY

FRIDAY 01.04.2022

08:00-20:00

OPTIONAL ONE DAY EXCURSION TO FLORENCE

(Lunch included)

END of the PSST 2022 CONFERENCE