



1° FORUM Nazionale dei Giovani Ricercatori di Scienza e Tecnologia dei Materiali

Sezione 4: Materiali Funzionali Molecolari
Sezione 8: Nanostrutture Funzionali



Bressanone 28-29 Novembre 2008
Sala Pressena - Hotel Grüner Baum

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- 8:30-9:00 **Registrazione**
- 9:00-9:30 **Conferenza di apertura:
motivazioni ed obiettivi del Forum**

A.- Sensori e biosensori

- 9:30-9:45 **A.1 Nanomechanical microcantilever biosensors**
P.Bergese, G.Oliviero, I.Alessandri, P.Colombi, L.E.Depero
- 9:45-10:00 **A.2 Supramolecular sensing with phosphonate cavitands**
M.Melegari, C.Massera, R.De Zorzi, S.Geremia, E.Kalenius,
E.Dalcanale
- 10:00-10:15 **A.3 Immune complex biosensors designed for cancer label-free
screening tests**
D.Gazzola, G.Zuccheri, C.Guiducci, A.Ferretti, S.Bonetti, V.Angeletti
B.Samori
- 10:15-10:30 **A.4 Polymeric chiral sensors**
P.Rizzo, I.Immediata, G.Guerra
- 10:30-10:45 **A.5 DNA nanostructures and biosensors: solutions for signal
amplification**
A.Vinelli, M.Onofri, G.Zuccheri, B.Samori
- 10:45-11:00 Coffe Break**

B.- Materiali per il drug delivery ed imaging

Sistemi biomimetici

- 11:00-11:15 **B.1 Guanidinium-calixarenes for gene delivery**
V.Bagnacani, F.Sansone, G.Donofrio, L.Baldini, A.Casnati, R.Ungaro
- 11:15-11:30 **B.2 Nanozymes for phosphate diesters hydrolysis**
R.Bonomi, F.Selvestrel, F. Mancin, U.Tonellato, P.Scrimin

- 11:30-11:45 **B.3 Hybrid Mesoporous Silica: A Preliminary Attempt to Engineer a drug Targeting Device**
L.Pasqua, F.Testa, C.Morelli, D.Sisci, E.Brunelli, S.Andò, R.Aiello
- 11:45-12:00 **B.4 Biomimetic surfaces based on self-assembling oligopeptides**
M.Di Foggia, C.Fagnano, P.Taddei, A.Torreggiani, M.Dettin, A.Tinti
- 12:00-12:15 **B.5 Functionalized dendrimers and nanoparticles as biomimetic catalysts**
G.Zaupa, L.J.Prins, P.Scrimin

C.- Materiali per la generazione e l'accumulo di energia

- 12:15-12:30 **C.1 Oriented TiO₂ nanostructured pillar arrays: synthesis and characterization**
S.Bertarione, F.Cesano, D.Scarano, A.Zecchina
- 12:30-12:45 **C.2 Synthesis, photocatalysis and charge trapping properties of TiO₂ nanocrystals**
M.D'Arienzo, F.Morazzoni, R.Scotti, O.Diwald, N.Siedl, M.J.Elser
- 12:45-13:00 **C.3 High efficient solution processable squaraine-based bulk-heterojunction solar cells**
E.Silvestri, M.D.Irwin, L.Beverina, A.Facchetti, G.A.Pagani, T.J.Marks

13:00-14:30 Pranzo

D.- Self-assembly e materiali funzionali

- 14:30-14:45 **D.1 Controlled guest release by orientation of cocrystalline s-PS phases**
A.R.Albunia, G.Guerra
- 14:45-15:00 **D.2 Properties and Applications of Co-Crystals of Syndiotactic Polystyrene**
C.D'Aniello, G.Guerra
- 15:00-15:15 **D.3 Effect of temperature on the structure and barrier properties of n-alkanethiolate self-assembled monolayers on gold**
M.Minelli, P.Srivastava, P.E.Laibinis, W.G.Chapman, F.Doghieri

- 15:15-15:30 **D.4 Self-Assembly of hydroxo-oxo-selenitopalladate nanostars $[\text{Pd}_{15}(\mu_3\text{-SeO}_3)_{10}(\mu_3\text{-OH})_{10}\text{O}]^{2-}$ and their supramolecular pairing in the solid state**
M.Delferro, C.Graiff, L.Eviri, G.Predieri
- 15:30-15:45 **D.5 Surface functionalization by smart polymers**
D.Zeni, D.Maniglio, A.Motta, V.Hasirci, C.Migliaresi
- 15:45-16:00 **D.6 New hybrid materials for electrocatalysis**
F.Terzi, L.Pigani, C.Zanardi, B.Zanfognini, R.Seeber, L.Pasquali, S.Nannarone

16:00-16:15 Coffe Break

E.- Elettronica, fotonica e spintronica molecolare

- 16:15-16:30 **E.1 From Block copolymers to end-capped polymers: a suitable method to control the electro-optical properties of polymeric materials**
P.Betti, A.Bolognesi, C.Botta, S.Destri, U.Giovanella, J.Moreau, M.Pasini, W.Porzio
- 16:30-16:45 **E.2 Factors influencing the photoluminescence efficiencies of Eu(III) and Tb(III) complexes in solution and in doped thin silica films**
M.Bolognesi, S.Quici, C.Scalera, M.Cavazzini, G.Accorsi, L.Armelao, G.Bottaro
- 16:45-17:00 **E.3 Spectroscopic characterization of diphenyl bithiophenes showing electrical bistability**
E.V.Canesi, D.Fazzi, C.Bertarelli, C.Castiglioni, D.Natali, G.Zerbi
- 17:00-17:15 **E.4 Toward single-molecule magnetic detection: synthetic strategies and investigation tools**
C.Danieli, A.Cornia, R.Sessoli, A.L.Barra, L.Bogani, W.Wernsdorfer, M.Mannini, F.Pineider, D.Gatteschi, E.Biavardi, E.Dalcanale
- 17:15-17:30 **E.5 Chromium horseshoes: chemistry, magnetism and EPR**
M.Rancan, M.L.Baker, C.A.Muryn, R.Pritchard, G.A.Timco, F.Tuna, R.E.P.Winpenny
- 17:30-17:45 **E.6 Packing effects on the thermal and photoinduced valence tautomerism in a cobalt : dioxolene 1:1 system**
G. Poneti, M.-A. Arrio, N. Brookes, J. C. Cezar, A. Dei, M. Mannini, A. Rogalev, P. Sainctavit, L. Sorace, F. Wilhelm

17:45-18:00 **E.7 Synthesis and characterization of nanostructured materials**
M.L.Saladino

18:00 - 20:00 **Poster Session**

20:30 **Cena Sociale**

Sabato 29-11-2008

A.- Sensori e biosensori

- 08:30-08:45 **A.6 Oligonucleotides and proteins anchored onto SAM of ions complexes**
N.Giamblanco, N.Tuccitto, A.Licciardello, G.Marletta
- 08:45-09:00 **A.7 Self-organized fluorescent probes based on silica nanoparticles**
M.Arduini, F.Mancin, U.Tonellato
- 09:00-09:15 **A.8 Interpretation of the emission fluorescence spectra of two fluoro-ionophores: DMABN-Crown4 and DMABN-Crown5**
S.Carlotto, A.Polimeno, C.Ferrante, V.Barone
- 09:15-09:30 **A.9 Optimized substrate for high sensitive fluorescence detection in microarray technology**
G.Cannata, C.Galati, L.Renna, N.Spinella

D.- Self-assembly e materiali funzionali

- 09:30-09:45 **D.7 A Co-functionalization approach to soluble and functional single-walled carbon nanotubes**
E.Menna, M.De Nardi
- 09:45-10:00 **D.8 Functionalised metal oxoclusters as nanosized building blocks for the development of functional inorganic-organic hybrid materials and porous hybrid frameworks**
S.Gross, F. Faccini, A. Famengo

10:00-10:15 **D.9 Nanostructured organic-inorganic hybrid coatings with reduced gas permeability**
M.G.De Angelis, F.Doghieri, M.Minelli, A.Montenero, F.Pilati,
M.Rocchetti, M.Toselli

10:15-10:30 **D.10 Calcium alkoxides as novel surface strengtheners for built heritage**
M.Favaro, P.Tomasin, N.El Habra, C.De Zorzi

10:30-11:00 **Coffe Break**

11:00-12:00 **Conferenza Plenaria**
Prof. Maurizio Prato
*"Dalla chimica organica alla scienza dei materiali:
approccio all'interdisciplinarietà"*

12:00-13:30 **Discussione generale**
Competenze Convergenti

13:30-14:30 **Pranzo**

POSTER SESSION

A.- Sensori e biosensori

- A.10 Cavitand functionalised silicon surfaces for molecular recognition**
A.Motta, M.Favazza, G.G.Condorelli, P. Betti, E.Dalcanale
- A.11 Development of amperometric sensors based on innovative materials**
L.Pigani, F.Terzi, C.Zanardi, B. Zanfognini, R.Seeber
- A.12 Design and synthesis of new chiral Cavitands Salen for enantioselective molecular recognition**
M.E.Amato, F.P.Ballistreri, S.Gentile, A.Pappalardo, G.A.Tomaselli, R.M.Toscano, G.Trusso Sfrazetto
- A.13 Nanoscale determination of conformation of a polymeric coating for microarray applications**
L.Sola, A.Yalcin, F.Damin, E.Ozkumur, G.di Carlo, M.Selim Ünlü, M.Chiari

B.- Materiali per il drug delivery ed imaging

Sistemi biomimetici

- B.6 Controlled release of bovine serum albumin (BSA) from large-pore ordered mesoporous materials**
V.Aina, G.Cerrato, G.Magnacca, C.Morterra
- B.7 Ibuprofen delivery behaviour on MCM-41: influence of organic groups amount**
V.Aina, E.Ghedini, M.Signoretto, F.Pinna, D.Guarascio, G.Cerrato, C.Morterra
- B.8 Complexes of rhenium with poly(amido-amine)s**
F.Amigoni, D. Donghi, D.Maggioni, G.D'Alfonso, M.Suardi, E.Ranucci, P.Ferruti, R.Cavalli
- B.9 Fabrication and characterization of porous silicon matrix for drug delivery applications**
V.A.Zamolo, F.Cattaruzza, L.Vaccari, M.Moneghini, I.Kikic, M.Prato

C.- Materiali per la generazione e l'accumulo di energia

- C.4 **Heteroaromatic based organometallic and organic chromophores in dye-sensitized solar cells**
A.Abbotto, C.Barolo, L.Bellotto, F.De Angelis, M.Grätzel, N.Manfredi, C. Marinzi, M.K.Nazeeruddin, A.Sanguineti, J.H.Yum
- C.5 **Electrode and electrolyte materials for IT-SOFCs**
S.Barison, S.Boldrini, L.Doubova, M.Fabrizio, C.Mortalò, R.Gerbasi

D.- Self-assembly e materiali funzionali

- D.11 **Self-assembly of cavitated based heteronuclear coordination cages: toward cage networks**
F.Bocchini, F.Gruppi, E.Dalcanale
- D.12 **A new methodology to analyse nanoparticles samples by means of Total Reflection of X-Rays Fluorescence (TXRF)**
E.Bontempi, L.Borgese, A.Zacco, L.E.Depero
- D.13 **Mesoporous organic-inorganic transition metal oxides films for advanced applications**
D.Aiello, R.Aiello, F.Testa, I.Aiello, M.Ghedini, A.Talarico
- D.14 **Synthesis of Functional Polymeric Micelles**
M.Benaglia
- D.15 **Dispersion-corrected DFT calculations: graphite and polyethylene as test cases**
D.Forrer, M.Pavone, V.Barone, M.Casarin, M.Sambi, A.Vittadini
- D.16 **Excited state relaxation dynamic in self assembled molecular structures**
E.Garbin, E.Collini, C.Ferrante, R.Bozio
- D.17 **Amplified Spontaneous Emission from a blend of polystyrene and PPV-derivative in an opal sandwich configuration**
S.Gardin, T.Dainese, R.Signorini, R.Bozio
- D.18 **Influence of dopants on properties and reactivity of LaGaO₃**
M.M. Natile, A.Galenda, A.Glisenti
- D.19 **Reactive mixing of polypropylene-polyhedral oligomeric silsesquioxanes (POSS) nanocomposites**
C.Pancrazi, M.Pracella, P.Narducci, A.Fina

- D.20 **The role of dispersion interactions in metal-free phthalocyanine self-assemblies on Ag (110)**
M.Sambj, D.Forrer, T.Orzali, F.Sedona, M.Casarin, E.Tondello, A.Vittadini, V.Barone, M. Pavone
- D.21 **UHV-STM study of highly ordered Fe(II) phthalocyanines on Ag(110)**
F.Sedona, M.Di Marino, M.Sambj, E.Tondello

E.- Elettronica, fotonica e spintronica molecolare

- E.8 **Encapsulation of photoactive molecules inside single wall carbon nanotubes**
P.Blondeau, E.Menna
- E.9 **Inspecting monolayers of Fe₄ single molecule magnets on gold surface**
F.Pineider, M.Mannini, C.Danieli, L.Armelao, F.Piras, P.Sainctavit, L.Gorini, E.Tondello, A.Cornia, D.Gatteschi, R.Sessoli
- E.10 **Mechanisms of multiphoton absorption and design strategies for the realization of an optical limiter useful for protection against laser damage**
I.Fortunati, R.Signorini, R.Bozio, A.Abbotto, L.Beverina, G.A.Pagani, G.Brusatin, M.Guglielmi
- E.11 **Monitoring of phase purity in organic semiconductors**
I.Bilotti, A.Brillante, E.Venuti, R.G.Della Valle
- E.12 **Visible luminescence of lanthanide ions in calcium scandium silicate and calcium yttrium silicate**
F.Piccinelli, A.Speghini, G.Mariotto, L.Bovo, M.Bettinelli
- E.13 **Development of dispersing elements based on photochromic materials showing large change in the refractive index**
G.Dassa, C.Bertarelli, A.Bianco, G.Pariani, G.Zerbi
- E.14 **High luminescent tricarbonyl Re(I) complexes containing 1,2-diazines ligand as dopants for pld devices**
E.Quartapelle, M.Panigati, M.Mauro, D.Donghi, G.D'Alfonso, P.Mercandelli, A.Sironi, P.R.Mussini, L.De Cola, Y.Sun
- E.15 **Correlation between dielectric/semiconductor interface characteristics and electrical response of polymer-based TFTs**
F.Todescato, R.Capelli, F.Dinelli, M.Yang, N.Camaioni, M.Muccini
- E.16 **Variation in morphologies and optical properties of gold core shells**
I.Ros, P.Schiavuta, P.Canton, R.Pilot, R.Bozio