

## **Dott. Valter Castelvetro**

### ATTIVITÀ DI RICERCA

Il Dr. Valter Castelvetro si è laureato in Chimica a Bologna nel 1985 ed ha conseguito il Perfezionamento in Chimica della Scuola Normale Superiore di Pisa nel 1992. ....

E' autore di oltre 40 pubblicazioni su riviste internazionali, 2 brevetti e 90 comunicazioni a congressi.

L'attività scientifica è attualmente orientata su 4 linee principali:

- 1) sintesi di dispersioni acquose di polimeri reattivi e ibridi o nanocompositi tramite polimerizzazione eterofasica e sol-gel, per applicazioni come coatings funzionali, anticorrosivi, consolidanti, precursori di membrane nanoporose, inchiostri, adesivi;
- 2) sintesi di macromolecole a struttura controllata (innestate su superfici solide, anfifiliche a blocchi) con tecniche di polimerizzazione vivente, e studio delle proprietà funzionali e delle capacità autoassemblanti;
- 3) polimeri fluorurati e/o reattivi per la protezione ed il consolidamento di manufatti di interesse culturale;
- 4) modifica di materiali polimerici o inorganici di origine naturale (fibre naturali e sintetiche, particelle inorganiche) per applicazioni nel settore tessile, del packaging, dei biomateriali, etc. In particolare vengono applicate tecniche accrescimento controllato di polimeri ancorati su superficie solido, oltre a processi di polimerizzazione controllata in fase omogenea o in dispersione eterofasica.

Pubblicazioni scientifiche più significative

1. VALTER CASTELVETRO, FRANCESCO CIARDELLI, CINZIA DE VITA, ANTONIO PUPPO (2006). Hybrid Nanocomposite Films from Mono- and Multi-functional POSS Copolyacrylates in Miniemulsion. MACROMOLECULAR RAPID COMMUNICATIONS. vol. 27 pp. 619-625
2. FRANCESCA SIGNORI, MASSIMO LAZZARI, VALTER CASTELVETRO, OSCAR CHIANTORE (2006). Copolymers of isopropenyl alkyl ethers with fluorinated acrylates and fluoroacrylates: influence of fluorine on their thermal, photochemical and hydrolytic stability. MACROMOLECULES. vol. 39 pp. 1749-1758
3. VALTER CASTELVETRO, CINZIA DE VITA, GIACOMO GIANNINI, SIMONE GIAIACOPI (in stampa). Role of anionic and non-ionic surfactants on the control of particle size and latex colloidal stability in the seeded emulsion polymerization of butyl methacrylate. JOURNAL OF APPLIED POLYMER SCIENCE. in stampa.
4. MARIA-BEATRICE COLTELLI, MARCO ANGIULI, ELISA PASSAGLIA, VALTER CASTELVETRO, FRANCESCO CIARDELLI (2006). Formation of short and long branching during the free radical functionalization in the melt of polyamide 6. MACROMOLECULES. vol. 39 pp. 2153-2161
5. VALTER CASTELVETRO, CINZIA DE VITA, GIACOMO GIANNINI, MARCO MALVALDI (2005). Alkoxysilane functional acrylic latexes: influence of copolymer composition on self-curing behavior and film properties. MACROMOLECULAR SYMPOSIA. vol. 226 pp. 289-302
6. MASSIMO LAZZARI, DOMINIQUE SCALARONE, VALTER CASTELVETRO, FRANCESCA SIGNORI, OSCAR CHIANTORE (2005). Novel partially fluorinated copolymers. An evidence of the effect of fluorine on the reactivity of the unfluorinated comonomer units. MACROMOLECULAR RAPID COMMUNICATIONS. vol. 26 pp. 75-81
7. VALTER CASTELVETRO, ENRICO FATARELLA, LEOPOLDO CORSI, SIMONE GIAIACOPI, GIANLUCA CIARDELLI (2006). Graft Polymerisation of Functional Acrylic

- Monomers from Cotton Fibres Activated by Continuous Ar Plasma. PLASMA PROCESSES AND POLYMERS. vol. 3 pp. 48-57
8. VALTER CASTELVETRO, CINZIA DE VITA (2004). Nanostructured Hybrid Materials from Aqueous Polymer Dispersions. ADVANCES IN COLLOID AND INTERFACE SCIENCE. vol. 108-109C pp. 167-185
  9. M. BRUGNARA, E. DEGASPERI, C. DELLA VOLPE, D. MANIGLIO, A. PENATI, S. SIBONI, L. TONIOLO, T. POLI, S. INVERNIZZI, VALTER CASTELVETRO (2004). The application of the contact angle in monument protection: new materials and methods. COLLOIDS AND SURFACES A-PHYSICOCHEMICAL AND ENGINEERING ASPECTS. vol. 241 pp. 299-312
  10. VALTER CASTELVETRO, CINZIA DE VITA, GIACOMO GIANNINI, DOMINIQUE SCALARONE, OSCAR CHIANTORE (2004). Water-borne organic and hybrid nanostructured polymer particles as film-forming materials for the consolidation and protection of porous substrates", Sci. Technol. Cult. Heritage. SCIENCE AND TECHNOLOGY FOR CULTURAL HERITAGE. vol. 13 pp. 37-46
  11. VALTER CASTELVETRO, MAURO AGLIETTO, FRANCESCO CIARDELLI, FEDERICA SPAGNOLI (2004). Synthesis and reactivity of a fluorinated N-alkylmaleimide towards free-radical grafting and polymerization reactions. JOURNAL OF FLUORINE CHEMISTRY. vol. 125 pp. 315-328
  12. ROCCO ANGELONE, CLAUDIA CAST, VALTER CASTELVETRO, FRANCESCO CIARDELLI, ARTURO COLLIGIANI, FRANCESCO GRECO, ALESSANDRO MAZZOTTA, GIACOMO RUGGERI (2004). Synthesis and electrooptical characterization of polysiloxanes containing indolyl groups acting as photoconductive substrates for photorefractive materials. E-POLYMERS. vol. 75 pp. 1-15
  13. MASSIMO LAZZARI, MAURO AGLIETTO, VALTER CASTELVETRO, OSCAR CHIANTORE (2003). Photochemical stability of partially fluorinated acrylic protective coatings. IV. Copolymers of 2,2,2-trifluoroethyl methacrylate and methyl alfa-trifluoromethyl acrylate with vinyl ethers. POLYMER DEGRADATION AND STABILITY. vol. 79 pp. 345-351
  14. CAGNOLATI R. LUCCHESI, LUCCHESI M., ROLLA P.A., VALTER CASTELVETRO, CIARDELLI F. COLLIGIANI A., COLLIGIANI A. (1992). DC Electrical Transport in a New Conducting Polymer: Oxidized Poly(N-Vinylpyrrole). SYNTHETIC METALS. vol. 46 pp. 127-131
  15. VALTER CASTELVETRO, ANTONELLA MANARITI, CINZIA DE VITA, FRANCESCO CIARDELLI (2002). Synthesis and Surface Properties of Microphase Separated or Nanostructured Coatings Based on Hybrid and Fluorinated Acrylic Copolymers. MACROMOLECULAR SYMPOSIA. vol. 187 pp. 165-176
  16. VALTER CASTELVETRO, MAURO AGLIETTO, FRANCESCO CIARDELLI, OSCAR CHIANTORE, MASSIMO LAZZARI, LUCIA TONIOLO (2002). Structure Control, Coating Properties, and Durability of Fluorinated Acrylic-based Polymers. JCT, JOURNAL OF COATINGS TECHNOLOGY. vol. 74
  17. LUCIA TONIOLO, TOMMASO POLI, VALTER CASTELVETRO, ANTONELLA MANARITI, OSCAR CHIANTORE, MASSIMO LAZZARI (2002). Tailoring New Fluorinated Acrylic Copolymers as Protective Coatings for Marble. JOURNAL OF CULTURAL HERITAGE. vol. 3 pp. 309-316
  18. T.S. BERZINA, V.I. TROITSKY, VALTER CASTELVETRO, M.P. FONTANA (2002). Electron beam sensitive LB films of fluorocarbon polymer. MATERIALS SCIENCE AND ENGINEERING. C, BIOMIMETIC MATERIALS, SENSORS AND SYSTEMS. vol. C 22 pp. 295-299

19. VALTER CASTELVETRO, GIORGIA FRANCINI, GIANLUCA CIARDELLI, MASSIMO CECCATO (2001). Evaluating Fluorinated Acrylic Latices as Textile Water and Oil Repellent Finishes. *TEXTILE RESEARCH JOURNAL*. vol. 71 pp. 399-406
20. MASSIMO LAZZARI, OSCAR CHIANTORE, VALTER CASTELVETRO, MAURO AGLIETTO (2001). Photochemical Stability of Partially Fluorinated Acrylic Protective Coatings II. Copolymers of 1H,1H,2H,2H-Perfluorodecyl Methacrylate with Unfluorinated Acrylic Esters. *CHEMISTRY OF MATERIALS*. vol. 13 pp. 2843-2849
21. VALTER CASTELVETRO, MAURO AGLIETTO, FRANCESCO CIARDELLI, OSCAR CHIANTORE, MASSIMO LAZZARI (2001). Design of Fluorinated Acrylic-Based Polymers as Water Repellent, Intrinsically Photostable Coating Materials for Stone. In D. CASTNER, D. GRAINGER Fluorinated Surfaces, Coatings, and Film (vol. 787 pp. 253-262).
22. VALTER CASTELVETRO, GIANLUCA BONTÀ PITTALUGA, FRANCESCO CIARDELLI (2001). Multifunctional Poly(vinyl ethers) by Controlled Cationic Polymerisation in Fluorinated Solvent. *MACROMOLECULAR CHEMISTRY AND PHYSICS*. vol. 202 pp. 2093-2103
23. VALTER CASTELVETRO, LORENZO MONTAGNINI DI MIRABELLO, MAURO AGLIETTO, ELISA PASSAGLIA (2001). Homo- and Copolymers of Hexafluoroisopropyl Methacrylate and  $\alpha$ -Fluoroacrylate with Alkyl Vinyl Ethers: Microstructure and Thermal Properties. *JOURNAL OF POLYMER SCIENCE. PART A, POLYMER CHEMISTRY*. vol. 39 pp. 32-45
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