

## CURRICULUM VITAE DEL PROF. GIUSEPPE MENSITIERI

### **DATI PERSONALI**

Nome: Giuseppe Mensitieri

Data e luogo di nascita: 14/06/1960, Napoli

Cittadinanza: italiana

Indirizzo:

Personale: Rampe Brancaccio 49, 80132 Napoli

Ufficio: Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale, Università degli Studi di Napoli Federico II, P.le Tecchio 80, 80125 Napoli; tel. 081-7682512

### **FORMAZIONE**

1985 Laurea in Ingegneria Chimica presso l'Università di Napoli Federico II con votazione 110 e lode/110.

### **CARRIERA PROFESSIONALE**

1990 - 2000 Ricercatore Universitario (gruppo di discipline n. 104), presso l'Università degli Studi di Napoli Federico II.

2000 - 2005 Professore Associato di Materiali Macromolecolari (settore scientifico disciplinare ING-IND/22) presso l'Università degli studi di Napoli Federico II.

2004 - 2006 Presidente del Corso di Laurea in Scienza e Ingegneria dei Materiali, presso l'Università degli Studi di Napoli Federico II.

2005 - Professore Ordinario di Scienza e Tecnologia dei Materiali (settore scientifico disciplinare ING-IND/22) presso l'Università degli Studi di Napoli Federico II.

2006 – 2009 Coordinatore del Master di II livello in Ingegneria dei Materiali e delle Strutture presso la facoltà di Ingegneria dell'Università degli Studi di Napoli Federico II.

2006 – 2009 Presidente del Corso di Laurea Specialistica in Ingegneria dei Materiali, presso l'Università degli Studi di Napoli Federico II.

2007 - Componente del Comitato Direttivo del Centro di Eccellenza (ora Centro di Ricerca Interdipartimentale) in Compositi Strutturali per Applicazioni Innovative (SCIC) dell'Università degli Studi di Napoli Federico II.

2009 – 2012 Presidente del Corso di Laurea in Scienza e Ingegneria dei Materiali, presso l'Università degli Studi di Napoli Federico II.

2010 – 2013 Coordinatore del Dottorato in Ingegneria dei Materiali e delle Strutture, presso l'Università degli Studi di Napoli Federico II.

2010 - Componente del Comitato Direttivo del *Centro di Ateneo per l'Innovazione e lo Sviluppo dell'Industria Alimentare (CAISIAL)*, presso l'Università degli Studi di Napoli Federico II.

2011 - Componente del Consiglio di Amministrazione del Distretto per l'Ingegneria dei Materiali Compositi, Polimerici e delle Strutture (IMAST scarl).

2012 - Rappresentante dell'Università degli Studi di Napoli Federico II nel Consiglio Direttivo del *Consorzio Interuniversitario Nazionale per la Scienza e la Tecnologia dei Materiali - I.N.S.T.M*

2013 - Componente del Consiglio di Amministrazione del Centro Regionale di Competenza Tecnologie S.c.a:r.l. (CRdC Tecnologie Scarl) della Regione Campania.

2013 – 2014 Coordinatore dei corsi di Laurea Magistrale in Ingegneria dei Materiali e di Laurea in Scienza e Ingegneria dei Materiali, presso l'Università degli studi di Napoli Federico II.

2012 – 2014 Membro della commissione di Abilitazione Scientifica Nazionale per il settore concorsuale 09/D1.

2013 - Coordinatore del corso di Dottorato in Ingegneria dei Prodotti e dei Processi Industriali, presso l'Università degli Studi di Napoli Federico II.

#### **ATTIVITA' TECNICHE**

1990 "Visiting Scientist" presso la University of Toronto (Canada) - Department of Chemical Engineering.

1991 "Visiting Professor" presso la North Carolina State University (U.S.A.) - Department of Chemical Engineering.

2002 - 2005 Docente presso l'Ecole des Mines de StEtienne, Axe "Elaboration et transformation des materiaux" nell'ambito del programma Socrates/Erasmus.

2013 - Associate editor della rivista *Frontiers in Chemistry – Section Polymer Chemistry* edito da Frontiers, parte del Nature Publishing Group.

#### **ATTIVITA' SCIENTIFICA**

I settori di principale interesse di ricerca sono nell'ambito dei materiali polimerici con particolare enfasi sulle relazioni proprietà - struttura dei materiali. Il campo nel quale il contributo scientifico è stato preminente é quello dello studio e della caratterizzazione del trasporto di molecole a basso peso molecolare in polimeri e delle loro interazioni chimico-fisiche con gli stessi, nonché delle conseguenti applicazioni tecnologiche. Le proprietà barriera dei polimeri a gas e vapori, le membrane per separazione gas, le interazioni polimero - solvente, le variazioni morfologiche indotte dalla presenza di

un penetrante, i sistemi polimerici superassorbenti, la resistenza ambientale di matrici termoplastiche e termoindurenti per compositi e dei compositi stessi, il rilascio controllato di farmaci, sono alcuni esempi di settori nei quali l'attività scientifica del prof. Mensitieri é stata più significativa.

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**Pubblicazioni su riviste internazionali**

RI 1) "Water sorption kinetics in Poly(aryl-ether-ether-ketone)", G. Mensitieri, A. Apicella, J.M. Kenny and L. Nicolais, *Journal of Applied Polymer Science*, **37**, 381 (1989).

RI 2) "Time and temperature dependent sorption in Poly-Ether-Ether-Ketone (PEEK)", G. Mensitieri, M.A. Del Nobile, A. Apicella and L. Nicolais, *Polymer Engineering and Science*, **29** (24), 1786 (1989).

RI 3) "Solvent induced crystallization in Poly(aryl-ether-ether-ketone)", G. Mensitieri, M.A. Del Nobile, A. Apicella, L. Nicolais and F. Garbassi, *Journal of Materials Science*, **25**, 2963 (1990).

RI 4) "Gas sorption in thermotropic liquid crystalline polymers", C. Carfagna, E. Amendola, G. Mensitieri and L. Nicolais, *Journal of Materials Science Letters*, **9**, 1280 (1990).

RI 5) "Different solvent stability of crystalline polymorphic forms of syndiotactic polystyrene", M. Rapacciuolo, C. De Rosa, G. Guerra, G. Mensitieri, A. Apicella and M.A. Del Nobile, *Journal of Materials Science Letters*, **10**, 1084 (1991).

RI 6) "Solvent mixtures sorption in amorphous PEEK", G. Mensitieri, A. Apicella, M.A. Del Nobile and L. Nicolais, *Polymer Bulletin*, **27**, 323 (1991).

RI 7) "The role of dielectric and dynamic-mechanical techniques in the process monitoring and environmental resistance of polymeric matrices for composites", A. Apicella, A. D'Amore, G. Mensitieri and L. Nicolais, *Plastics, Rubber and Composites Processing and Applications*, **18** (3), 127, (1992).

RI 8) "Transport of water dissolved oxygen in polymers via electrochemical technique", L. Nicodemo, A. Marcone, T. Monetta, G. Mensitieri and F. Bellucci, *Journal of Membrane Science*, **70**, 207 (1992).

RI 9) "Polyoxyethylene (PEO) and different molecular weight PEO's blends monolithic devices for drug release", A. Apicella, B. Cappello, M. A. Del Nobile, M.I. La Rotonda, G. Mensitieri and L. Nicolais, *Biomaterials*, **14** (2), 83, (1993). I

- RI 10) "Extreme environment resistance of PEEK matrix", G. Mensitieri, A. Apicella, M.A. Del Nobile and L. Nicolais, *Journal of Reinforced Plastics and Composites*, **12 (11)**, 1138, (1993).
- RI 11) " A numerical method to predict the time dependent temperature profile and mechanical behavior during the processing of multilayer thermosetting composite structures", A. Apicella, M.A. Del Nobile, G. Mensitieri, M. Montanino, P.R. Stupak, and L. Nicolais, *Science and Engineering of Composite Materials*, **2 (4)**, 237, (1993).
- RI 12) " Gas transport properties of Ethylene-Propylene-Carbon monoxide polyketone terpolymer", M.A. Del Nobile, G. Mensitieri, L. Nicolais, A. Sommazzi and F. Garbassi, *Journal of Applied Polymer Science*, **50**, 1261, (1993).
- RI 13) "Thermal, mechanical and rheological evolution during the processing of multilayer thermosetting composite structures", A. Apicella, M.A. Del Nobile, G. Mensitieri, M. Montanino, and P.R. Stupak, *Composite Structures*, **27**, 121 (1994).
- RI 14) "Anomalous Diffusion in Poly-ether-ether-ketone (PEEK)", M.A. Del Nobile, G. Mensitieri, P.A. Netti, and L. Nicolais, *Chemical Engineering and Science*, **49 (5)**, 633 (1994).
- RI 15) "The effect of film thickness on oxygen sorption and transport in dry and water saturated Kapton<sup>®</sup> polyimide", G. Mensitieri, M.A. Del Nobile, F. Bellucci, and L. Nicodemo, *Journal of Membrane Science*, **89**, 131 (1994).
- RI 16) "Water soluble drug delivery systems based on a non-biological bioadhesive polymeric system", B. Cappello, M.A. Del Nobile, M.I. La Rotonda, G. Mensitieri, A. Miro and L. Nicolais, *Il Farmaco* , **49 (12)**, 809 (1994).
- RI 17) "Water sorption in a novel liquid crystalline epoxy resin", C.Carfagna, E. Amendola, M. Giamberini, G. Mensitieri, M.A. Del Nobile *Polymer Engineering and Science*, **35 (2)**, 137 (1995).
- RI 18) "Low Temperature Melting Behavior of CO<sub>2</sub> Crystallized Modified PETs", G. Mensitieri, M.A. Del Nobile, G. Guerra, A. Apicella, and H. Al Ghatta, *Polymer Engineering and Science*, **35 (6)**, 506 (1995).
- RI 19) "Gas transport through Ethylene-Acrylic Acid Ionomers", M.A. Del Nobile, G. Mensitieri, L. Nicolais and R.A. Weiss, *Journal of Polymer Science Part B: Polymer Physics*, **33**, 1269( 1995).
- RI 20) "Water transport in a polyketone terpolymer", G. Mensitieri, M.A. Del Nobile, A. Sommazzi and L. Nicolais, *Journal of Polymer Science Part B: Polymer Physics*, **33** 1365 (1995).
- RI 21) "Gas and water vapour transport in a polyketone terpolymer", M.A. Del Nobile, G. Mensitieri and A. Sommazzi, *Polymer*, **36 (26)**, 4943 (1995).
- RI 22) "Moisture-Matrix Interactions in Polymer based Composite Materials", G. Mensitieri, M.A. Del Nobile, A. Apicella, and L. Nicolais, *Revue de l'Institut Français du Pétrole*, **50 (4)**,1 (1995).

RI 23) "Low molecular weight molecules diffusion in advanced polymers for food packaging applications", M.A. Del Nobile, G. Mensitieri, C. Manfredi, A. Arpaia and L. Nicolais, *Polymers for Advanced Technologies*, **7**, 409 (1996).

RI 24) "Water sorption in a cellulose based hydrogel", F. Esposito, M.A. Del Nobile, G. Mensitieri and L. Nicolais, *Journal of Applied Polymer Science*, **60 (13)**, 2403 (1996).

RI 25) "Thermal effects on gas transport properties of ionomers used in food packaging applications", M.A. Del Nobile, G. Mensitieri, C. Manfredi, L. Nicolais, *Packaging Technology and Science*, **9**, 225 (1996).

RI 26) "Effect of chemical composition on gas transport properties of ethylene based ionomers", M.A. Del Nobile, G. Mensitieri, L. Nicolais, *Polymer International*, **41**, 73-78 (1996).

RI 27) "A generalized form of the Langmuir isotherm for gas adsorption in glassy polymers", F. Esposito, M.A. Del Nobile, G. Mensitieri, and G. Astarita *I&EC Research.*, **35**, 2939-2945 (1996).

RI 28) "Water sorption kinetics in Hyaluronic acid esters", P.A. Netti, M.A. Del Nobile, G. Mensitieri, L. Ambrosio, L. Nicolais, *Journal of Bioactive and Compatible Polymers*, **11**, 312-327 (1996).

RI 29) "Vapor sorption in emptied clathrate samples of syndiotactic polystyrene", C. Manfredi, M.A. Del Nobile, G. Mensitieri, G. Guerra, T. Rapacciuolo, *Journal of Polymer Science Part B: Polymer Physics*, **35**, 133-140 (1997).

RI 30) "New functionalized EVOHs': synthesis and water vapor transport properties", M.A. Del Nobile, P. Laurienzo, M. Malinconico, G. Mensitieri, L. Nicolais, *Packaging Technology and Science*, **10**, 95-108 (1997).

RI 31) "Moisture transport properties of a degradable nylon for food packaging applications", M.A. Del Nobile, G. Mensitieri, L.R. Lostocco, S.J. Huang, L. Nicolais, *Packaging Technology and Science*, **10**, 311-330 (1997).

RI 32) "The influence of the thermal history on the shelf life of carbonated beverages bottled in plastic containers", M.A. Del Nobile; G. Mensitieri, L. Nicolais, P. Masi, *Journal of Food Engineering*, **34**, 1-13 (1997).

RI 33) "Gas and water vapor transport through polymer based protective materials for stone monuments: fluorinated polyurethanes", E. Antonucci, C. Mastrangeli, G. Mensitieri, M.A. Del Nobile, L. Nicolais, *Materials and Structures*, **31**, 104-110 (1998).

RI 34) "The role of mass transport in engineering applications of polymeric materials", G. Mensitieri, M.A. Del Nobile, and L. Nicolais, *Trends in Chemical Engineering*, **5**, 71-97 (1998).

RI 35) "The role of complex semicrystalline structure on mass transport properties of polymers for packaging applications", M.A. Del Nobile and G. Mensitieri, *Current Trends in Polymer Science*, **3**, 25-436 (1998).

- RI 36) "The Transport Mechanisms of Gases through Metallized Films Intended for Food Packaging Applications", M.A. Del Nobile, G. Mensitieri, A. Aldi and L. Nicolais, *Packaging Technology and Science*, **12**, 261-269 (1999).
- RI 37) "<sup>13</sup>C Solid State NMR determination of degree of crosslinking in super-absorbing cellulose based networks", D. Capitani, M.A. Del Nobile, G. Mensitieri, A. Sannino, and A.L. Segre, *Macromolecules*, **33(2)**, 430-437, (2000).
- RI 38) "A Novel Spectroscopic Approach to Investigate Transport Processes in Polymers: the Case of Water/Epoxy System", S. Cotugno, D. Larobina, G. Mensitieri, P. Musto, and G. Ragosta, *Polymer*, **42(15)**, 6431-6438, (2001).
- RI 39) "Modulation of Drug Release from Hydrogels by Using Cyclodextrins: the Case of Nicardipine/ $\beta$ -Cyclodextrin System in Crosslinked Polyethylenglycol", F. Quaglia, G. Varricchio, A. Miro, M.I. La Rotonda, D. Larobina and G. Mensitieri, *J. Controlled Release*, **71(3)**, 329-337, (2001).
- RI 40) "Probing by time-resolved FTIR spectroscopy mass transport, molecular interactions and conformational ordering in the system chloroform - syndiotactic polystyrene", S. Cotugno, G. Guerra, G. Mensitieri, P. Musto, V. Venditto, *Macromolecules*, **35(6)**, 2296-2304, (2002).
- RI 41) "Time-resolved FTIR Spectroscopy: A Powerful Tool to Investigate Diffusion Processes in Polymeric Films and Membranes" P. Musto, G. Ragosta, G. Mensitieri, *e-Polymers*, n.17 (2002).
- RI 42) "Crystalline orientation and molecular transport properties in nanoporous syndiotactic polystyrene films" Rizzo, Paola; Alburnia, Alexandra R.; Milano, Giuseppe; Venditto, Vincenzo; Guerra, Gaetano; Mensitieri, Giuseppe; Di Maio, Luciano. *Macromolecular Symposia* (2002), 185 (Flow-Induced Crystallization of Polymers), 65-75.
- RI 43) "Mechanistic Understanding of Degradation in Bioerodible Poly(anhydrides): Consequences for Drug Delivery" D. Larobina, M.J. Kipper, G. Mensitieri, and B. Narasimhan, *AIChE J.* **48 (12)**, 2960-2970 (2002).
- RI 44) "Probing the degree of crosslinking of a cellulose based superabsorbing hydrogel through traditional and NMR techniques" F. Lenzi, A. Sannino, A. Borriello, F. Porro, D. Capitani and G. Mensitieri, *Polymer*, **44 (5)**, 1577 - 1588 (2003).
- RI 45) "Polymeric sensing films absorbing organic guests into a nanoporous host crystalline phase", G. Mensitieri, V. Venditto, G. Guerra, *Sensors & Actuators B - Chemical* **92(3)**, 255 - 261 (2003).
- RI 46) "Designing Microporous Macromolecular Hydrogels for Biomedical Applications: a Comparison between Two Techniques" A. Sannino, P.A. Netti, G. Mensitieri and L. Nicolais, *Composites Science & Technology* **63 (16)**, 2411-2416, (2003).

- RI 47) "Sorption Thermodynamics and Mutual Diffusivity of Carbon Dioxide in Molten Polycaprolactone", S. Cotugno, E. Di Maio, C. Ciardiello, S. Iannace, G. Mensitieri and L. Nicolais, **42**, 4398-4405 (2003) *I.&E.C.Research*.
- RI 48) "NMR and Calorimetric Investigation of Water in a Superabsorbing Crosslinked Network Based on Cellulose Derivatives", D. Capitani, G. Mensitieri, F. Porro, N. Proietti, A.L. Segre, *Polymer.*, **44 (21)**, 6589-6598 (2003)
- RI 49) "Evaluation of the degree of crosslinking of cellulose-based Superabsorbent hydrogels: a comparison between different techniques", F. Lionetto, A. Sannino, G. Mensitieri, A. Maffezzoli, *Macromol. Symp.*, **200**, 199-207 (2003)
- RI 50) "Gas Sorption and Transport in Syndiotactic Polystyrene with Nanoporous Crystalline Phase", D. Larobina, L. Sanguigno, V. Venditto, G. Guerra, G. Mensitieri. *Polymer*, **45(2)**, 429-436 (2004)
- RI 51) "Water and synthetic urine sorption capacity of cellulose based hydrogels under compressive stress field", A. Sannino, G. Mensitieri and L. Nicolais, *J. Appl. Pol. Sci.* **91 (6)**, 3791-3796 (2004).
- RI 52) "Polyelectrolyte membranes based on sulfonated syndiotactic polystyrene in its clathrate form", A. Borriello, M. Lavorgna, N. Malagnino, G. Mensitieri, T. Napoletano, L. Nicolais, *Macromol. Symp.*, **218**, 293-302 (2004).
- RI 53) "Optical Sensor Based On Ultra Thin Film of  $\delta$ -Form Syndiotactic Polystyrene for Fast and High Resolution VOCs Detection" M. Giordano, M. Russo, A. Cusano, A. Cutolo G. Mensitieri, L.Nicolais. *Appl. Phys. Letters*, **85 (22)**, 5349-5351 (2004).
- RI 54) "A High Sensitivity Optical Sensor For Chloroform Vapours Detection Based On Nanometric Film of  $\beta$ -Form Syndiotactic Polystyrene" M.Giordano, M.Russo, A.Cusano, G.Mensitieri, *Sensors&actuators B – Chemical*, **107**, 140-147 (2005).
- RI 55) "A chloroform transducer based on sPS- $\delta$ -coated Quartz-Crystal Microbalance", P. Arpaia, G. Guerra, G. Mensitieri, R. Schiano Lo Moriello, *IEEE Transactions on Instrumentation and Measurement*, **54 (1)**, 31-37 (2005).
- RI 56) "Simultaneous Gravimetric and Calorimetric Analysis of Chloroform Sorption in Nanoporous Semicrystalline sPS", A. Sannino, D. Larobina, G. Mensitieri, A. Aldi and A. Maffezzoli, *Journal of Applied Polymer Science* **96 (5)**, 1675-1681 (2005).
- RI 57) "Molecular Interactions in and Transport Properties of Densely Cross-Linked Networks: A Time-Resolved FT-IR Spectroscopy Investigation of the Epoxy/H<sub>2</sub>O System", S. Cotugno, G. Mensitieri, P. Musto and L. Sanguigno, *Macromolecules*, **38**, 801-811 (2005)
- RI 58) "Syndiotactic Polystyrene Thin Film as Sensitive Layer for an Optoelectronic Chemical Sensing Device", M.Giordano, M. Russo, A. Cusano, G. Mensitieri and G. Guerra, in *Sensors & Actuators B – Chemical* **109**, 177-184 (2005).

- RI 59) "Structure optimization of PCL foams by using mixtures of CO<sub>2</sub> and N<sub>2</sub> as blowing agents", E. Di Maio, S. Iannace, G. Mensitieri, L. Nicolais, W. Li, R.W. Flumerfelt, *Polymer Engineering & Science*, **45** (3), 432-441 (2005). (I.F. = 0.892).
- RI 60) "Characterization of microcellular biodegradable polymeric foams produced from supercritical carbon dioxide solutions", S. Cotugno, E. Di Maio, G. Mensitieri, S. Iannace, G.W. Roberts, R.G. Carbonell and H.B. Hopfenberg, *I.&E.C.Research*, **44**, 1795-1803 (2005).
- RI 61) "Diffusion of water and ammonia through Polyimide-Silica bicontinuous nanocomposites: Interactions and reactions". L. Mascia, G. Mensitieri, P. Musto and G. Ragosta, *Polymer*, **46**, 4492-4503 (2005).
- RI 62) "Aerogels with a Nanoporous Host Crystalline Phase", C. Daniel, D. Alfano, V. Venditto, S. Cardea. E. Reverchon, D. Larobina. G. Mensitieri, G. Guerra, *Advanced Materials*, **17**, 1515-1518 (2005).
- RI 63) "Anisotropic Guest Diffusion in the  $\delta$  Crystalline Host phase of Syndiotactic Polystyrene: Transport Kinetics in Films with Three Different Uniplanar Orientations of the Host Phase", Vincenzo Venditto, Anna De Girolamo Del Mauro, Giuseppe Mensitieri, Giuseppe Milano, Pellegrino Musto, Paola Rizzo, and Gaetano Guerra, *Chemistry of Materials*, (2006), **18**(9), 2205-2210
- RI 64) "A predictive approach based on the Simha-Somcynsky free volume theory for the effect of dissolved gas on viscosity and glass transition temperature of polymeric mixtures" Ernesto Di Maio, Salvatore Iannace, Giuseppe Mensitieri and Luigi Nicolais, *J. Polym. Sci. part B: Polym. Phys.*, (2006), **44**(13), 1863-1873.
- RI 65) "PET/PEN Blends of Industrial Interest as Barrier Materials. Part I. Many-Scale Molecular Modeling of PET/PEN Blends" Maurizio Fermeglia, Paolo Cosolia, Marco Ferrone, Stefano Piccarolo, Giuseppe Mensitieri and Sabrina Pricl, *Polymer*. (2006), **47**, 5979-5989.
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- RI 67) "Water Transport in Densely Crosslinked Networks: a comparison between Epoxy Systems Having Different Interactive Character". G.Mensitieri, M. Lavorgna, P.Musto, G. Ragosta, *Polymer* (2006), **47**, 8326-8336.
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- RI 72) 'On the Molecular Mechanism of H<sub>2</sub>O Diffusion into Polyimides. A Vibrational Spectroscopy Investigation' P. Musto, G. Ragosta, G. Mensitieri, M. Lavorgna, *Macromolecules* (2007), **40** (26), 9614-9627.
- RI 73) 'Chloroform sorption in nanoporous crystalline and amorphous phases of syndiotactic polystyrene', G. Mensitieri, D. Larobina, G. Guerra, V. Venditto, M. Fermeglia, S. Pricl, *J. Polym. Sci. part B: Polym. Phys.* (2008) **46**, 8-15.
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## Brevetti

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