CV Prof. M. Laus

Personal data:

last name	Laus
first name	Michele
titel	Prof. Ph.D. in Industrial Chemistry
date of birth	25/10/58
place of birth	Bologna
citizenship	Italian
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Education:

University:	19/7/1982, Diplom thesis in Industrial Chemistry at the Institute of Intermediate Compounds-Bologna with honours 17/9/1987, Ph.D. thesis in Industrial Chemistry at the Institute of Intermediate Compounds-Bologna 1986 – A. Lucci prize for his scientific activity awarded by the AICAT (Italian Association of Thermal Analysis and Calorimetry) 1/9/87 Assistant Professor of Material Science 1/9/1998 Associate Professor of Industrial Chemistry and Polymeric Materials
Current position	since november 2005, *Full Professor* of Industrial Chemistry and Polymeric Materials

He spent periods as visiting professor at Cornell University (invited by Prof. C. K. Ober) and at the Martin Luter University of Friburg (invited by Prof. W. Gronski)

Current Research Topics

1. Polymeric Liquid Crystals
2. Mechanical characterization of polymeric materials
3. Nanocomposites
4. Polymer nanoparticles and dispersions
5. Chemical reaction engineering: radical and catalytic controlled processes
6. Block copolymers-based technology. ‘‘Bottom-up’’ approaches using self-organizing block copolymers (BCPs) with precisely controlled block lengths and composition are under investigation to develop nanofabrication processes.

Applied activity.

Prof. M. Laus has at present research contracts with the following enterprises: SACMI (analysis of the compression cutting process), Fusion (Photopolymerization), BC Plast (PET Foams), TetraPak (Injection moulding simulation and optimization), Donegani-Eni

(Functional fotoactive nano and microparticles), Solvay Solexis (PVDF based blends), Diab (PET based Foams), Prismian (Rubber analysis and Simulation), Novamont (MaterB blends), Viscolor (Compact TPU), TEUE (compact TPU), Austin (TPU foams).

Active peer review projects
-EMPIR Project Innanopart (2015-2018), Metrology for Innovative Nanoparticles
Coordinator Alex Shard (NPL)
-EMPIR Project 3DMetChemIT (2015-2018), Advanced 3D chemical metrology for innovative technologies- Coordinator Ian Gilmore (NPL)
-EMRP Project TReND (2013-2016), Traceable characterisation of nanostructured devices
Coordinator Ian Gilmore (NPL)
-JRP-REG (Researcher Excellence Grant) CRYSTAL (2013-2014)
Crystalline surfaces, self assembled structures, and nano-origami as length standard in (nano)metrology- Coordinator Ingo Busch (PTB)
-Prin 2010-2014
Coordinator G. Guerra (PTB)

Prof. M. Laus is author of 194 papers in International Journals and 16 patents with an H index of 29. He is the Coordinator of the EUPOC Conferences and President of the AIM (Italian Association for Science and Technology of Macromolecules).
In addition, he has been invited as Speaker in more than 70 International Congress, including Leningrado 1991, Seoul 1993, Anheim 1995, Creta 1999, Eindoven 2001, Stockolm 2003, Frankfurt 2004, Friburg 2006, Graz 2009, Leoben 2010, Salou 2011, Gargnano 2011, Torino 2014, Chang Mai 2104, Warsaw 2014, Lille 2015, Dresden 2015, Hong Kong 2016.

In the following, some selected papers for the last three years are reported.

1. G. Seguini, T.J. Giammaria, F. Ferrarese Lupi, K. Sparnacci, D. Antonioli, V. Gianotti, F. Vita, I.F. Placentino, J. Hilhorst, C. Ferrero, O. Francescangeli, M. Laus, M. Perego "Thermally induced self-assembly of cylindrical nanodomains in low molecular weight PS-b- PMMA thin films" Nanotechnology, 2014, 25, 4, 045301. DOI: 10.1088/0957-4484/25/4/045301.

2. F. Ferrarese Lupi, T.J. Giammaria, G. Seguini, F. Vita, O. Francescangeli, K. Sparnacci, D. Antonioli, V. Gianotti, M. Laus, M. Perego "Fine tuning of lithographic masks through thin films of PS-b- PMMA with different molar mass by rapid thermal processing" ACS Applied Materials and Interfaces, 2014, 6, 10, 7180-7188. DOI: 10.1021/am.5003074.

3. F. Ferrarese Lupi, T.J. Giammaria, G. Seguini, M. Ceresoli, M. Perego, D. Antonioli, V. Gianotti, K. Sparnacci, M. Laus "Flash grafting of functional random copolymers for surface neutralization" Journal of Materials Chemistry C, 2014, 2, 4909-4917. DOI: 10.1039/C4TC00328D.

4. F. Ferrarese Lupi, T.J. Giammaria, G. Seguini, M. Laus, E. Enrico, N. De Leo, L. Boarino, C. K. Ober, M. Perego "Thermally induced orientational flipping of cylindrical phase diblock copolymers" J. Mater. Chem. C, 2014, 2, 2175-2182

5. M. Ceresoli, F. Ferrarese Lupi, G. Seguini, K. Sparnacci, V. Gianotti, D. Antonioli, M. Laus, L. Boarino, M. Perego "Evolution of lateral ordering in symmetric block copolymer

thin films upon rapid thermal processing" Nanotechnology, 2014, 25, 27, 275601. DOI: 10.1088/0957- 4484.25/27/275601.

6. M. Perego, F. Ferrarese Lupi, M. Ceresoli, T.J. Giammaria, G. Seguini, E. Enrico, L. Boarino, D. Antonioli, V. Gianotti, K. Sparnacci, M. Laus "Ordering dynamics in symmetric PS-b- PMMA diblock copolymer thin films during rapid thermal processing" Journal of Materials Chemistry C, 2014, 2, 6655-6664. DOI: 10.1039/C4TC00756E.

7. V. Gianotti, D. Antonioli, K. Sparnacci, M. Laus, T.J. Giammaria, M. Ceresoli, F. Ferrarese Lupi, G. Seguini, M. Perego, "Characterization of ultra-thin polymeric films by gas chromatography-mass spectrometry hyphenated to thermogravimetry" Journal of Chromatography A, 2014, 1368, 204-210. DOI: 10.1016/j.chroma.2014.09.073.

8. K. Sparnacci, D. Antonioli, V. Gianotti, M. Laus, G. Zuccheri, F. Ferrarese Lupi, T.J. Giammaria, G. Seguini, M. Ceresoli, M. Perego "Thermal stability of functional P(S-r-MMA) random copolymers for nanolithographic applications" ACS Applied Materials and Interfaces, 2015, 7, 7, 3920- 3930. DOI: 10.1021/am509088s.

9. E. Martinelli, I. Del Moro, G. Galli, M. Barbaglia, C. Bibbiani, E. Mennillo, M. Oliva, C. Pretti, D. Antonioli, M. Laus "Photopolymerized network polysiloxane films with dangling hydrophilic/hydrophobic chains for the bioufouling release of invasive marine sepulid ficopomatus enigmaticus"
ACS Applied Materials and Interfaces, 2015, 7, 15, 8923-8301. DOI: 10.1021/acsami.5b01522.

10. K. Sparnacci, D. Antonioli, V. Gianotti, M. Laus, F. Ferrarese Lupi, T.J. Giammaria, G. Seguini, M. Perego "Ultrathin random copolymer-grafted layers for block copolymer self-assembly" ACS Applied Materials and Interfaces, 2015, 7, 20, 10944-10951. DOI: 10.1021/acsami.5b02201.

11. F. Ferrarese Lupi, G. Aprile, T.J. Giammaria, G. Seguini, G. Zuccheri, N. De Leo, L. Boarino, M. Laus, M. Perego "Thickness and microdomain orientation of asymmetric PS-b-PMMA block copolymer films inside periodic gratings" ACS Applied Materials and Interfaces, 2015, 7, 24, 23615-23622. DOI: 10.1021/acsami.5b07127

12. M. Ceresoli, F.G. Volpe, G. Seguini, D. Antonioli, V. Gianotti, K. Sparnacci, M. Laus, M. Perego "Scaling of correlation length in lamellae forming PS-b- PMMA thin films upon high temperature rapid thermal treatments" Journal of Materials Chemistry C. 2015, 3, 33, 8618-8624. DOI: 10.1039/C5TC01473E.

13. M. Ceresoli, M. Palermo, F. Ferrarese Lupi, G. Seguini, M. Perego, G. Zuccheri, S.D. Phadatare, D. Antonioli, V. Gianotti, K. Sparnacci, M. Laus "Neutral wetting brush layers for block copolymer thin films using homopolymer blends processed at high temperatures" Nanotechnology. 2015, 26, 41, 415603. DOI: 10.1088/0957-4484/26/41/415603.

14. A. Bozzola, V. Robbiano, K. Sparnacci, M. Pisano, G. Aprile, L. Boarino, A. Proto, R. Fusco, M. Laus, D. Comoretto, L.C. Andreani "A multi-optical collector of sunlight employing luminescent materials and photonic nanostructures" Advanced Optical Material, 2016, 4, 1, 147-155. DOI: 10.1002/adom.201500327.

15. G. Seguini, F. Zanenga, T.J. Giammaria, M. Ceresoli, K. Sparnacci, D. Antonioli, V. Gianotti, M. Laus, M. Perego “Enhanced lateral ordering in cylinder 1 forming PS-b- PMMA through cooperative effect of embedded solvent and thermal annealing” ACS Applied Materials and Interfaces, 2016, 8, 12, 8280-8288. DOI: 10.1021/acsami.6b00360.

16. D. Antonioli, K. Sparnacci, M. Laus, F. Ferrarese Lupi, T.J. Giammaria, G. Seguini, M. Ceresoli, M. Perego, V. Gianotti “Thermogravimetry- gaschromatography-mass spectrometry determination of binary polymer brush composition in ultra-thin films” Analytical and Bioanalytical Chemistry, 2016, 408, 12, 3155-3163. DOI: 10.1007/s00216-016- 9380-8.

17. T.J. Giammaria, F. Ferrarese Lupi, G. Seguini, M. Perego, F. Vita, O. Francescangeli, B. Wenning, C.K. Ober, K. Sparnacci, D. Antonioli, V. Gianotti, M. Laus “Micrometer scale ordering in high-c block copolymer thin films via high temperature thermal treatments” ACS Applied Materials and Interfaces. 2016, 8, 15, 9897-9908. DOI: 10.1021/acsami.6b02300.

18. N. Mauro, F. Chiellini, C. Bartoli, M. Gazzarri, M. Laus, D. Antonioli, P.Griffiths, A. Manfredi, E. Ranucci, P. Ferruti “RGD mimic polyamidoamine-montmorillonite composites with tunable stiffness as scaffolds for bone tissue engineeting applications” Journal of Tissue Engineering and Regenerative Medicine. 2016. DOI: 10.1002/term.2115.