



## **Flavia Pinzari**

Year of birth 5<sup>th</sup> March 1968

Nationality: Italian

### **Recent affiliation**

Lead researcher at the “Institute of Biological Systems”, Italian National Research Council (CNR), Montelibretti, Rome, Italy [permanent position]. 03/06/2020 - present  
Scientific Associate, Botanical Diversity (Algae, Fungi and Plant Division), Life Sciences Department, Natural History Museum (London, UK). 2015-present

### **Education**

PhD in Ecology, University of Rome La Sapienza. Thesis: “*Cellulose biodegradation in natural and anthropogenic environments*”. 06/11/2006 - 27/07/2010.

Master in Science, Technology and Innovation. Governmental School for Public Administration. Thesis in *Business Administration of Cultural Heritage*. 16/11/2005 - 19/05/2006.

Specialisation in Plant Biotechnology, University of Pisa. 01/10/1998 - 23/10/2000.

Specialisation in Chemistry and Technology of Natural Organic Compounds, University of Rome La Sapienza. 01/01/1996 - 28/01/1999.

Master in Science and Culture of the Environment, International Centre for Environmental Studies, Pontificia Universitas Antonianum, Rome. 03/10/1994 - 14/02/1997.

Graduate in Biology (Italian Degree, 4 years course), University of Rome La Sapienza, maximum mark cum laude. Thesis in Fungal Ecology 03/10/1987 - 14/02/1994

### **Previous important affiliations**

Newton International Grantee (Royal Society, London, UK) at the Natural History Museum, Department of Life Science, London 01/02/2018- 31/01/2020

Researcher at the Governmental Council for Agricultural Research and Analysis of Agricultural Economics (CREA), Rome [permanent position]. 28/12/2012- 02/06/2020

Deputy Director, School for the Restoration of Cultural Heritage, Ministry of Cultural Heritage, Rome (appointment contemporary to the one below). 05/07/2010-01/06/2012.

Head Officer of the Biology Laboratory (6-7 staff) at “*Istituto Centrale per il Restauro e la Conservazione del Patrimonio Archivistico e Librario*”, Ministry of Cultural Heritage 02/01/2006-27/12/2012.

Officer at the Biology Laboratory at “Istituto Centrale per il Restauro e la Conservazione del Patrimonio Archivistico e Librario (ICRCPAL)”, Ministry of Cultural Heritage 16/02/2001-02/01/2006.

### Projects

- H2020 MSCA-IF-EF-SE 2019 (Society and Enterprise panel). Proposal number: 892048. Project ALIENinSoil. Role: Principal Investigator.
- Project “Microbial biodiversity and biotechnological potential of saline soils with various pedoclimatic characteristics”, Programme “Canaletto, Bilateral Exchange of Scientists Italy-Poland”. Italian Ministry of Foreign Affairs. Role: Italian Coordinator.
- Project “Excalibur”, Horizon 2020 Research & Innovation. Leader of task 1.5 2019-2024.
- Newton International Fellowship, NF170295, “Fungal strategies to mine silicates for 2018-2020. nutrients”. Role: Principal investigator.
- Project “Diverfarming”, Horizon 2020 Research & Innovation. Leader of task 1 2017-2022.
- SYNTHESYS project at NHM, GB-TAF-6877. Title: "Microbiome inhabiting bone specimens and possible associated phenomena of minerals mobilisation and precipitation from hydroxyapatite". May 2017.
- Project URBANFOR3 (Forests in Urban Ecosystems). FILAS-RU-2014-1021 Funded by FILAS Regione Lazio, Italy. Role: Participant in the Operative Unit on Soil Biochemistry. 2015-2017.
- Establishment of a Laboratory of Molecular Biology for Written Cultural Heritage at the ICRCPAL. Funded by the Ministry of Cultural Heritage (IT). Role: Project leader. 2009-2011.
- Establishment of SEM laboratory for the study of Written Cultural Heritage at the ICRCPAL, Rome. Funded by the Italian Ministry of Cultural Heritage. Role: Project leader. 2005-2007.

### Teaching

Lecturer in “Materials characteristics, biodeterioration and diagnostics” at the International Master “Biology for the knowledge and conservation of cultural heritage” Università degli Studi Roma TRE (Rome, Italy) **2016-2017**

Lecturer in Microbiology (72 h/year), University School of Restoration of Cultural Heritage, Italian Ministry of Cultural Heritage, Rome. **2009-2015**

Lecturer in Microbiology (32 h/year), University of Rome Tor Vergata. **2008-2010**

Lecturer in Microbiology Applied to Conservation (24 h/year), Regional Directorate for Education, Training and Culture, Heritage and Cultural Services, Codroipo, Italy. **2008-2010**

Lecturer in Technical innovation, Research techniques and Materials (18 h), Italian Ministry of Heritage and Cultural Activities, Rome. **2003**

Lecturer in Biology Applied to Cultural Heritage (30 h), Course organised by the EU project Parnassus–DISIO, University of Rome La Sapienza. **2003**

### Publications on Heritage Science in peer reviewed journals with IF \*asterisk=corresponding author

- Pinzari, Cornish, Jungblut (2020) Skeleton bones in museum indoor environments offer niches for fungi and are affected by weathering and deposition of secondary minerals. *Environmental microbiology* 22 (1), 59-75
- Soltys, (+9 authors), Pinzari (2019) Lead soaps formation and biodiversity in a XVIII Century wax seal coloured with minium *Environmental Microbiology* Doi: 10.1111/1462-2920.14735
- Bicchieri, Biocca, Colaizzi, Pinzari\* (2019) Microscopic observations of paper and parchment: the archaeology of small objects. *Heritage Science*, 7: 47, Doi: 10.1186/s40494-019-0291-9
- Cicero, Pinzari\*, et al. (2018) 18th Century knowledge on microbial attacks on parchment: Analytical and historical evidence *International Biodeterioration & Biodegradation* 134: 76-82
- Mercuri, Buonora, Cicero, Helas, Manzari, Marinelli, Paoloni, Pasqualucci, Pinzari et al. (2018) Metastructure of illuminations by infrared thermography. *Journal of Cultural Heritage* 31, 53-62.

- Sterflinger, Little, Pinar, [Pinzari](#), et al. (2018) Future directions and challenges in biodeterioration research on historic materials and cultural properties. *International Biodeterioration & Biodegradation* 129, 10-12.
- Polo, Cappitelli, Villa, [Pinzari](#) (2017) Biological invasion in the indoor environment: the spread of *Eurotium halophilicum* on library materials. *International Biodeterioration & Biodegradation* 118, 34-44.
- Sclocchi, Kraková, [Pinzari](#), et al. (2016). Microbial life and death in a foxing stain: a suggested mechanism of photographic prints defacement. *Microbial Ecology* 73, 815-826
- [Pinzari\\*](#) et al. (2016) Phenotype MicroArray™ system in the study of fungal functional diversity and catabolic versatility. *Research in Microbiology* 167, 710-722.
- Bicchieri, [Pinzari\\*](#) (2016). Discoveries and oddities in library materials *Microchemical Journal* 124:568-577
- Tanney, Nguyen, [Pinzari](#) et al. (2015) A century later: rediscovery, culturing and phylogenetic analysis of *Diploöspora rosea*, a rare onygenalean hyphomycete. *Antonie van Leeuwenhoek* 108: 1023-1035.
- Piñar, Tafer, Sterflinger, [Pinzari](#) (2015) Amid the possible causes of a very famous foxing: molecular and microscopic insight into Leonardo da Vinci's self-portrait. *Environmental Microbiology Reports* 7, 849-859.
- Micheluz, Manente, Tigini, Prigione, [Pinzari](#), Ravagnan (2015) The extreme environment of a library: Xerophilic fungi inhabiting indoor niches. *International Biodeterioration & Biodegradation* 99: 1-7
- Pinar, Sterflinger, Ettenauer, Quandt, [Pinzari](#) (2014) A Combined Approach to Assess the microbial contamination of the Archimedes Palimpsest. *Microbial Ecology* 69: 1-17
- Bučková, Puškárová, Sclocchi, Bicchieri, Colaizzi, Pangallo, [Pinzari\\*](#) (2014) Co-occurrence of bacteria and fungi and spatial partitioning ... *Polymer Degradation and Stability* 108: 1-11
- Yang, Martinelli, Tasso, Sprocati, [Pinzari](#) et al. (2014) A new biogenic, struvite-related phosphate, the ammonium-analogue of hazenite,  $(\text{NH}_4)\text{NaMg}_2(\text{PO}_4)_2 \cdot 14\text{H}_2\text{O}$ . *American Mineralogist* 99: 1761-6
- Piñar, Sterflinger, [Pinzari](#) (2014) Unmasking the measles-like parchment discoloration: molecular and micro-analytical approach. *Environmental Microbiology* 17: 427-443
- Sclocchi, Damiano, Matè, Colaizzi, [Pinzari\\*](#) (2012) Fungal biosorption of silver particles on 20th-century photographic documents. *International Biodeterioration & Biodegradation* 84: 367-371
- Michaelsen, [Pinzari](#) et al. (2013) Monitoring the effects of different conservation treatments on paper-infecting fungi. *International Biodeterioration & Biodegradation* 84: 333-341
- [Pinzari\\*](#) et al. (2012) Biodegradation of ivory... *Environmental microbiology* 15(4):1050-1062
- Montanari, Melloni, [Pinzari](#) et al. (2012) Fungal biodeterioration of historical library materials stored in Compactus movable shelves. *International Biodeterioration & Biodegradation* 75: 83-88
- Sterflinger, [Pinzari](#) (2012) The revenge of time: Fungal deterioration of cultural heritage with particular reference to books, paper and parchment. *Environmental Microbiology* 14(3): 559-566
- Bicchieri, Monti, Piantanida, [Pinzari](#) et al. (2012) The Indian drawings of the poet Cesare Pasarella: Non-destructive analyses and conservation treatments. *Analytical and Bioanalytical Chemistry* 402: 1517-1528
- [Pinzari\\*](#) et al. (2012) Fungal bioleaching of mineral components in a twentieth-century illuminated parchment *Analytical and Bioanalytical Chemistry* 402(4): 1541-1550
- Tate, Reiche, [Pinzari](#) et al. (2011) History and surface condition of the Lewis Chessmen in the collection of the National Museums Scotland (Hebrides, late 12th-early 13th centuries). *Archéosciences* 35: 249-258
- Bicchieri, Monti, Piantanida, [Pinzari](#) et al. (2011) Non-destructive spectroscopic characterization of parchment documents *Vibrational Spectroscopy* 55(2): 267-272
- [Pinzari\\*](#) et al. (2010) Biodegradation of inorganic components in paper documents... *International Biodeterioration & Biodegradation* 64: 499-505
- Michaelsen, Piñar, [Pinzari](#) (2010) Molecular and microscopic investigation of the microflora inhabiting

a deteriorated Italian manuscript dated from the 13th century. *Microbial Ecology* 60: 69-80

- Michaelsen, Piñar, Montanari, Pinzari (2009) Biodeterioration of a 16th-century book... *International Biodeterioration & Biodegradation* 63: 161-168
- Michaelsen, Pinzari et al. (2006) Application of molecular techniques for identification of fungal communities colonising paper material. *International Biodeterioration & Biodegradation* 58: 133-141
- Pinzari\* et al. (2006) Biodeterioration of Paper: A SEM Study of Fungal Spoilage Reproduced Under Controlled Conditions. *Macromolecular Symposia* 238: 57-66
- Piantanida, Pinzari\* et al. (2006) Atomic force microscopy applied to the study of Whatman paper surface deteriorated by a cellulolytic filamentous fungus. *Macromolecular Symposia* 238: 92-97
- Pinzari\* et al. (2004) Electronic nose for the early detection of Moulds. *Indoor Built Environment* 13:387-95
- Canhoto, Pinzari et al (2004) Application of electronic nose technology for the detection of fungal contamination in library paper. *International Biodeterioration & Biodegradation* 54(4): 303-309

### Books chapters in English

- Pinzari F. Microbial processes involved in the deterioration of paper and parchment. In *Biodeterioration and Preservation in Art, Archaeology and Architecture*. Mitchell, R., Clifford, J. (eds) London: Archetype Publications Ltd. 2018:33–56.
- Pinzari F, Cialei V, Piñar G. A case study of ancient parchment biodeterioration using variable pressure and high vacuum scanning electron microscopy. In *Historical Technology, Materials and Conservation: SEM and Microanalysis*. Meeks, N., Cartwright, C., Meek, A., and Mongiatti, A. (eds). London, UK: Archetype Publications – International Academic Projects, 2012.
- Pinzari F. Microbial ecology of indoor environments. The ecological and applied aspects of microbial contamination in archives, libraries and conservation environments. Chapter 9 in: Sabah A. Abdul-Wahab Al-Sulaiman (Editor) "Sick Building Syndrome in Public Buildings and Workplaces". In: *Sick Building Syndrome in Public Buildings and Workplaces*. Springer, Berlin Heidelberg, 2011 pp. 153-178.
- Pinzari F, Montanari M. Mould growth on library materials stored in Compactus-type shelving units. In: *Sick Building Syndrome in Public Buildings and Workplaces*. Springer, Berlin Heidelberg, 2011 pp. 193–206.
- Pinar G, Pinzari F. and Sterflinger K (2011): Modern technologies as basis for the preservation of parchment, pp:250-253. In: Ana Maria López Montes, Francisco Collado Montero, Victor Medina Flórez, Teresa Espejo Arias, Ana García Bueno (Eds.). 18th International Meeting on Heritage Conservation. , 848; Edited by Universidad de Granada. Depósito Legal: GR 4206-2011 pp:250-253., Granada; ISBN 978-84-338-5339-4
- Pinzari F, Troiano F, Pinar G, Sterflinger K, Montanari M. The contribution of microbiological research in the field of book, paper and parchment conservation. In: Engel P, Schirò J, Larsen R, Moussakova E, Kecskeméti I. *New Approaches to Book and Paper Conservation–Restoration*; Verlag Berger, Horn/Wien; 2011b. ISBN 978–3–85028–518–6
- Pinzari F, Montanari M. A substrate utilisation pattern (SUP) method for evaluating the biodeterioration potential of micro-flora affecting libraries and archival materials, 2008; 236-241. In: Joice H. Townsend L, Toniolo F, Cappitelli F (eds) *Conservation Science*. Archetype Publications, London

### Publications in Italian

1. Montanari M., Pinzari F., *Prevenzione e gestione delle infestazioni in biblioteche ed archivi*, CAB Newsletters, Anno 9, n.2-4 (aprile dicembre 2004), nuova serie, pag. 14-20.

2. Berti S., C. Fanelli, S. Palanti, F. Pinzari (2005) Il legno struttura e composizione, Il biodeterioramento del Legno In: Caneva et al. (Eds) La biologia vegetale per i Beni Culturali – vol I - Biodeterioramento e Conservazione, pp.101-107 – Nardini Editore
3. Berti S., Pinzari F., Tiano P. (2005) Metodi Fisici. In: Caneva et al. (Eds) La biologia vegetale per i Beni Culturali – vol I - Biodeterioramento e Conservazione, pp. 313-317.
4. Pinzari F. (a cura di) 2008. Scienza e Ricerca per i Beni Culturali. Microscopia elettronica a scansione e microanalisi. Quaderni 2, Istituto Centrale di Patologia del Libro, Gangemi editore, Roma, pp.95
5. Pinzari F., Martucci B. (2008) Analisi scientifiche e diagnostiche sui materiali cartacei per mezzo della microscopia elettronica a scansione a pressione variabile e della microanalisi (VP-SEM, EDS). In: L. Residori (Ed.) Studi e Ricerche. Indagini scientifiche e metodi di restauro. Centro di Fotoriproduzione legatoria e restauro degli Archivi di Stato. MiBAC. Pp 87-95.
6. Pinzari, F., (2011) Microbial ecology of indoor environments. The ecological and applied aspects of microbial contamination in archives, libraries and conservation environments. Chapter 9 in: Sabah A. Abdul-Wahab Al-Sulaiman (Editor) "Sick Building Syndrome in Public Buildings and Workplaces". Elsevier
7. Pinzari, F., Montanari, M., (2011) Mould Growth on Library Materials Stored in Compactus-Type Shelving Units. Chapter 11. in: Sabah A. Abdul-Wahab Al-Sulaiman (Editor) "Sick Building Syndrome in Public Buildings and Workplaces". Elsevier
8. Flavia Pinzari, Ferderica Troiano, Guadalupe Pinar, Katja Sterflinger & Matteo Montanari (2011): The contribution of microbiological research in the field of book, paper and parchment conservation. In: Patricia Engel, Joseph Schirò, René Larsen, Elissaveta Moussakova and Istvan Kecskeméti, New Approaches to Book and Paper Conservation-Restoration; Verlag Berger, Horn/Wien; ISBN 978-3-85028-518-6
9. Pinar, G; Sterflinger, K; Pinzari, F. (2014): Paper and molecular techniques for the diagnostic of material infections. In: Istituto Centrale per il Restauro e la Conservazione del Patrimonio Archivistico e Librario, Misisti, M.C. (ed.), I disegni di Leonardo. Diagnostica, Conservazione, Tutela., 109-113; Sillabe, Citta de Castello; ISBN 978-88-8347539-9
10. Montanari M., Pinzari F., Prevenzione e gestione delle infestazioni in biblioteche ed archivi, CAB Newsletters, Anno 9, n.2-4 (aprile dicembre 2004), nuova serie, pag. 14-20.
11. Brunello M., Ciancio L., Munafò P., Pinzari F., Riccardi M.L. (2001) Il museo dell'Istituto centrale di Patologia del Libro. Guida didattica. SIAE -ICPL
12. Brunello M., Ciancio L., Munafò P., Pinzari F., Riccardi M.L. (2002) Il museo dell'Istituto centrale di Patologia del Libro. CD interattivo. Studio Kaleidos. SIAE -ICPL
13. Basilone C., Pinzari F. (2001) L'attività e il potenziale: l'acqua dal punto di vista dei funghi biodeteriogeni. Cabnewsletter, Conservazione negli Archivi e nelle Biblioteche 5: 10-12.
14. Pinzari F., (2001) Funghi: una minaccia alle persone ed al patrimonio culturale. Cabnewsletter, Conservazione negli Archivi e nelle Biblioteche 6: 10-15.
15. Pinzari F. (2005) Il suolo come ambiente per i piccoli animali. In: M.T. Dell'Abate, A.Benedetti, R.Francaviglia (a cura di) Il suolo che vive. Introduzione alla scienza del suolo CRA- Consiglio per la Ricerca e la Sperimentazione in Agricoltura. Min. Politiche Agricole. Roma pp. 93-97

16. Pinzari F. (2005) Scheda di Biologia n.1. In: M.T. Dell'Abate, A.Benedetti, R.Francaviglia (a cura di) Il suolo che vive. Introduzione alla scienza del suolo CRA- Consiglio per la Ricerca e la Sperimentazione in Agricoltura. Min. Politiche Agricole. Roma pp. 98-100
17. Pinzari F. (2005) Scheda di Biologia n.2. In: M.T. Dell'Abate, A.Benedetti, R.Francaviglia (a cura di) Il suolo che vive. Introduzione alla scienza del suolo CRA- Consiglio per la Ricerca e la Sperimentazione in Agricoltura. Min. Politiche Agricole. Roma pp. 101-103
18. Pinzari F. (2005) Scheda di Microbiologia n.6. In: M.T. Dell'Abate, A.Benedetti, R.Francaviglia (a cura di) Il suolo che vive. Introduzione alla scienza del suolo CRA- Consiglio per la Ricerca e la Sperimentazione in Agricoltura. Min. Politiche Agricole. Roma pp. 130-133
19. F.Pinzari, M. Missori, M.Montanari. Il microscopio elettronico a pressione variabile (SEM-VP) con detector QBSD e Microanalisi EDS per lo studio delle carte antiche. Il MiBAC ricerca e applicazioni a confronto. A cura di MiBAC-Direzione generale per l'innovazione tecnologica e la promozione, Mirabilia, X Salone dei Beni e delle Attività Culturali, 1-3 dicembre 2006. Venezia. Abstract pp.35-36.
20. G. Piantanida, M. Bicchieri, M. Monti, A. Sodo, F. Pinzari, Fitati, non fidatevi, in Il restauro in Italia e oltre i confini MiBAC, a cura di MiBAC-Direzione generale per l'innovazione tecnologica e la promozione, Mirabilia, 2007, Abstract p.18.
21. F.Pinzari, Microscopia elettronica a pressione variabile (SEM-VP) e microanalisi (EDS) per la diagnostica, la conservazione ed il restauro dei beni culturali. In: MiBAC, Conservazione: una storia futura. A cura di MiBAC-Direzione generale per l'innovazione tecnologica e la promozione, Edizioni MP Mirabilia srl, Salone dell'arte del restauro e della conservazione dei beni culturali e ambientali. Ferrara 22-25 Marzo 2007. Abstract pp.23-24.
22. Montanari M., Munafò P.F., Pinzari F., Ruschioni E., Trematerra P. Le nuove pubblicazioni dell'ex Istituto Centrale per la Patologia del Libro, In: MIBAC, Il restauro una certezza per il domani. A cura di MiBAC-Direzione generale per l'innovazione tecnologica e la promozione, Edizioni MP Mirabilia srl, Salone dell'arte del restauro e della conservazione dei beni culturali e ambientali. Ferrara 2-5 aprile 2008. Abstract p.22.
23. Riccardi M.L., Pinzari F. Un frammento di Boccaccio recuperato. La curiosa storia del ritrovamento di 35 carte del Decameron: analisi e restauro. In: MIBAC, Il restauro una certezza per il domani. A cura di MiBAC-Direzione generale per l'innovazione tecnologica e la promozione, Edizioni MP Mirabilia srl, Salone dell'arte del restauro e della conservazione dei beni culturali e ambientali. Ferrara 2-5 aprile 2008. Abstract p.23.
24. Batori, C. Casetti Brach, M. Bicchieri, M. Di Bella, F. Pinzari, Yemen: i frammenti ritrovati nella Grande Moschea di Sana'a. Restauro 2009. Salone dell'Arte e del Restauro e della Conservazione dei Beni Culturali ed Ambientali - XVI Edizione Ferrarafiere, 2009 Edizioni MP Mirabilia srl, Abstract
25. Pinzari F., V. Cialei and G. Piñar. (2009): Le Macchie Viola sulla pergamena delle Grazie: Indagini biologiche innovative. Seminar: "Le Grazie Ritrovate, da Venezia a Roma alla Ricerca dell'Identità Perduta".[XIII Salone dei Beni e delle Attività Culturali. Italian Ministry of Cultural Heritage. , Venice, Italy. , 3-5 December 2009.] In: Italian Ministry of Cultural Heritage. Published by Edizioni Mirabilia, Italy, XIII Salone dei Beni e delle Attività Culturali., pp. 117-119.
26. 35. Pinzari F., Colaizzi P., Rotili R., Valenti P. (2003) Una collezione di funghi nocivi ai materiali librari: la sua importanza e la gestione delle informazioni. Bollettino ICR nuova serie 6-7: 50-58.

27. 36. Pinzari F., Colaizzi P., Montanari M., Valenti P. (2003) Responses of library material deteriorating-fungi to nitrogen atmosphere. In: Rauch A., Godaniburg P. (eds) Moulds, Health and Heritage. Conference Proceedings. Braunschweig 4-5 Sept., 2003.
28. 37. Montanari M., Pinzari F., Gli insetti che danneggiano i beni librari ed archivistici: prevenzione e disinfestazione in atti Convegno: Dal pest control al pest management Firenze 2004 , 185-201
29. 38. De Mico A., Missori M., Pinzari F., Pasquariello G. (2004) "Biodeterioration of aged paper materials: chemical and spectroscopic studies and new treatment methodology" Proceedings of 1st International Workshop on Science, Technology and Cultural Heritage Venezia 29 giugno-1 luglio. AIV associazione Italiana del Vuoto. Editrice Compositori, Bologna, pp.87-95
30. 39. Piantanida G., M. Bicchieri, F. Pinzari, C. Coluzza: Atomic force microscopy imaging directly on paper: a study of library materials degradation proceedings of SPIE - Optical Methods for Arts and Archaeology, Vol 5857 (2005), 217-227; Renzo Salimbeni, Luca Pezzati; Eds.
31. 40. Pasquariello G., Pinzari F., Missori M., Caruso G., De Mico A. (2006) Foxing di origine Biologica: riproduzione in vitro analisi SEM e Ottiche. In: Biologia e Archeobiologia nei beni culturali. A cura di: C.Sabbioni, F.Persia, L.Castelletti. Aiar e Musei Civici – Comune di Como, pp. 210-220.
32. 41. Basilone C., Colaizzi P., Pinzari F., Valenti P. (2006) Effetti delle atmosfere modificate sulla crescita e la vitalità di funghi filamentosi associati al biodeterioramento di materiali librari. In: Biologia e Archeobiologia nei beni culturali. A cura di: C.Sabbioni, F.Persia, L.Castelletti. Aiar e Musei Civici – Comune di Como, pp. 170-176.
33. 42. Piantanida G. Montanari M., Pinzari F., Bicchieri M., Coluzza C. (2006) Atomic force microscopy to study paper biodeterioration. In: G.Bonizzoni (Ed.) Fondazione Diocesana per i Beni Culturali, ARCA Edizioni, Catania. Proceedings of the 2nd International "Science, Technology and Cultural Heritage" workshop organised by the Italian Association of Vacuum (AIV) 9-11 November 2005. pp.97-102.
34. 43. M. Montanari, P. Valenti. and F. Pinzari, (2006) Conservative approach to the evaluation of biological damage on objects of art made from paper. In: G.Bonizzoni (Ed.) Fondazione Diocesana per i Beni Culturali, ARCA Edizioni, Catania. Proceedings of the 2nd International "Science, Technology and Cultural Heritage" workshop organised by the Italian Association of Vacuum (AIV) 9-11 November 2005. pp.85-91.
35. 44. De Mico, G. Pasquariello and F. Pinzari (2006) Paper deterioration: survey on stains of chemical and biological origin analysed by SEM-EDS techniques. In: G.Bonizzoni (Ed.) Fondazione Diocesana per i Beni Culturali, ARCA Edizioni, Catania. Proceedings of the 2nd International "Science, Technology and Cultural Heritage" workshop organised by the Italian Association of Vacuum (AIV) 9-11 November 2005. pp.53-60.
36. 45. M. Montanari, F. Pinzari "Il registro notarile di Parente di Stupio - Analisi microbiologica, molecolare e con SEM-EDS" in Libri&arte Restauri e analisi diagnostiche a cura di R. Carrarini, C. Casetti Brach, Quaderni 1, Istituto Centrale di Patologia del Libro, Gangemi editore, Roma (2006), pp. 35-38
37. 46. Michaelsen, A., F. Pinzari, K. Ripka, W. Lubitz and G. Piñar. 2006. Molecular tools to identify non-cultivable microorganisms involved in biodeterioration of historic paper

materials. Proceedings of the 7th European Conference Safeguarded Cultural Heritage. Vol. 2, 798-801.

38. 47. M. Montanari, F. Pinzari, "Sopralluogo nei magazzini di una biblioteca: un caso studio", Boll. ICR gennaio-giugno 2007, pp. 81-84.
39. 48. Flavia Pinzari, Mariasanta Montanari (2007) "Inquinamento biologico in archivi e biblioteche: metodi innovativi per valutarne l'entità ed il rischio associato per i materiali librari" CD. Atti del Convegno di Chimica Ambientale di Udine 2006 Ed. Lo Coco Università degli Studi di Udine.
40. 49. Fanelli C., Pinzari F., Canhoto O., Magan N. (2007) Potenzialità di impiego di un naso elettronico per l'individuazione precoce delle infezioni fungine. Dossier. ICR gennaio-giugno 2007, pp. 81-84.
41. 50. M. Montanari, F. Pinzari, M. Ricci "Moulds on book stored on "compactus shelves": a case study". Proceedings Conference Copenhagen Museum microclimates. Copenhagen 2007. Edited by Tim Padfield and Karen Borchersen. Published by The National Museum of Denmark
42. 51. G. Piantanida, A. Sodo, M. Monti, F. Pinzari and M. Bicchieri, High-resolution imaging techniques in characterization of paper damage: SEM EDS and AFM use in stains classification, in stampa su Atti del 1th International Meeting "Youth in the Conservation of Cultural Heritage".
43. 52. Irene Renda, Francesco Lonerio, Corrado Fanelli, Antonio Scarpa, Flavia Pinzari Fungal Volatiles As Early Markers Of Paper Spoilage: The Electronic Nose Technology Proceedings of the 1th International Meeting "Youth in the Conservation of Cultural Heritage".
44. 53. Pinar, G; Sterflinger, K; Pinzari, F. (2014): Paper and molecular techniques for the diagnostic of material infections. In: Istituto Centrale per il Restauro e la Conservazione del Patrimonio Archivistico e Librario, Misisti, M.C. (ed.), I disegni di Leonardo. Diagnostica, Conservazione, Tutela., 109-113; Sillabe, Citta de Castello; ISBN 978-88-8347539-9
45. 54. Piñar, G., Sterflinger, K. and F. Pinzari. (2013): The Microflora Inhabiting Leonardo da Vinci's Self Portrait: a Fungal Role in Foxing Spots. [[ICOM-CC Graphic Document Working Group. Interim Meeting Vienna, Austrian National Library, Vienna, 17-19 April 2013] In: Published by L. Watteeuw and C. Hofmann (eds.) International Council of Museums (ICOM)., Paper Conservation: Decisions & Compromises.
46. 55. Pinzari, F., Cialei, V. and G. Piñar. (2012): A case study of ancient parchment biodeterioration using variable pressure and high vacuum scanning electron microscopy. In: Archetype Publications, Nigel Meeks, Caroline Cartwright, Andrew Meek, Aude Mongiatti (eds), Historical Technology, Materials and Conservation: SEM and Microanalysis; Archetype Publications , London; ISBN 9781904982654 FullText

#### **Editorship**

Member of the editorial board of: ***Journal of Applied Microbiology***, ***Letters in Applied Microbiology***, ***International Biodeterioration and Biodegradation***

Reviewer for international journals (among which: *Environmental Microbiology*, *Microbial Ecology*, *Royal Society Open Science*, *Journal of Cultural Heritage*, *Plos One*, *Microchemical Journal*).

#### **Active Member of associations**

Council member of the ***International Biodeterioration & Biodegradation Society*** (2017-present)



Board member of the European Research Centre for Book and Paper Conservation and Restoration  
(University for Continuing Education Krems, Austria)