**Appendix 5**

# LIST OF PUBLICATIONS

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## I. List of publications representing scientific achievement, referred to in art. 16 paragraph. 2 of the Act

A) A series of six original papers on:

**„Degradation and detoxification of organotin compounds by microscopic fungal strains and the *Streptomyces* strain ”**

Publications that make up the selected research achievement:

[1] **Bernat P**., Długoński J. 2007. Tributyltin chloride interactions with fatty acids composition and degradation ability of the filamentous fungus *Cunninghamella elegans*. Int. Biodet. Biodeg. 60, 133-136.

IF = 1.23; MNiSW = 20 (Cited: 11)

*The contribution of my work 80% - the concept of work, design and execution of experimental work, development and interpretation of results, preparation of manuscript*

[2] **Bernat P**., Słaba M., Długoński J. 2009. Action of tributyltin (TBT) on the lipid content and potassium retention in the organotins degradating fungus *Cunninghamella elegans*. Curr. Microbiol. 59, 315-320.

IF = 1.33; MNiSW = 13 (Cited: 5)

*The contribution of my work 70% - the concept of work, the design and execution of experimental work, data analysis, manuscript preparation*

[3] **Bernat P.**, Długoński J. 2009. Isolation of *Streptomyces* sp. strain capable of butyltin compounds degradation with high efficiency. J. Hazard. Mater. 171, 660-664.

IF = 4.144; MNiSW = 32 (Cited: 4)

*The contribution of my work 80% - the concept of work, the design and execution of experimental work, data analysis, manuscript preparation*

[4] **Bernat P**., Długoński J. 2012. Comparative study of fatty acids composition during cortexolone hydroxylation and tributyltin chloride (TBT) degradation in the filamentous fungus *Cunninghamella elegans* Int Biodet Biodeg. 74, 1-6.

IF = 2.059; MNiSW = 25 (Cited: 2)

*The contribution of my work 80% - the concept of work, a leading part in the execution of experimental work, development and interpretation of results, preparation of manuscript*

[5] **Bernat P**., Szewczyk R, Krupiński M, Długoński J. 2013. Butyltins degradation by *Cunninghamella elegans* and *Cochliobolus lunatus* co-culture. J. Hazard. Mater. 247, 277-282.

IF = 3.925; MNiSW = 45 (Cited: 3)

*The contribution of my work 65% - the concept of work, a leading part in the planning of experiments, development and interpretation of results, preparation of manuscript for publication*

[6] **Bernat P**, Gajewska E, Szewczyk R, Słaba M, Długoński J. 2013. Tributyltin (TBT) induces oxidative stress and modifies lipid profile in the filamentous fungus *Cunninghamella elegans*. Environ Sci Pollut Res. 21, 4228-4235.

IF = 2.618; MNiSW = 30 (Cited: 0)

*The contribution of my work 60% - the concept of work, a leading part in the planning of experiments, development and interpretation of results, preparation of manuscript*

Summary IF = 15.309

Summary MNiSW = 165

*The value of IF for positions 1-4 is given in accordance with the year of publication, and for positions 5-6 for 2012. The points of The Ministry of Science and Higher Education are given according to the year of publication.*

## II. List of (not included in the achievement submitted for habilitation) published scientific papers and indicators of scientific achievements

### A) Scientific publications in journals in the database of Journal Citation Reports (JRC)

**Before the doctorate**

1. **Bernat P**, Długoński J 2002. Degradation of tributyltin by the filamentous fungus *Cunninghamella elegans*, with involvement of cytochrome P-450. Biotech Lett 24:1971-1974

   IF = 0.802; MNiSW = 16 (Cited: 11)

*The contribution of my work 70% - a leading part in the execution of experimental work, development and interpretation of results, preparation of manuscript*

2. Szewczyk R, **Bernat P**, Milczarek K. Długoński J. 2003. Application of microscopic fungi isolated from polluted industrial areas for polycyclic aromatic hydrocarbons and pentachlorophenol reduction, Biodegradation 14, 1-8.

   IF = 0.819; MNiSW = 16 (Cited: 8)

*The contribution of my work 30% - involved in the planning of experiments and determination of aromatic hydrocarbons, preparing a manuscript for publication*

Summary IF = 1.621

Summary MNiSW = 32

**After the doctorate**

3. **Bernat P**, Długoński J (2006) Acceleration of tributyltin chloride (TBT) degradation in liquid cultures of the filamentous fungus *Cunninghamella elegans*. Chemosphere 62:3-8

   IF = 2.44; MNiSW = 24 (Cited: 19)

*The contribution of my work 80% - a leading part in the execution of experimental work, development and interpretation of results, preparation of manuscript*

4. Słaba M., Szewczyk R., **Bernat P**., Długoński J. 2009. Simultaneous toxic action of zinc and alachlor resulted in enhancement of zinc uptake by the filamentous fungus *Paecilomyces marquandii.* Sci. Total Environ. 407, 4127-4133.
   IF = 2.91; MNiSW = 32 (Cited: 9)

*The contribution of my work 20% - a part in the planning of experiments involving fatty acids and their execution*

5. Paraszkiewicz K., **Bernat P.,** Długoński J. 2009. Effect of nickel, copper and zinc on emulsifier production and saturation of cellular fatty acids in filamentous fungus *Curvularia lunata.* Int. Biodet. Biodeg. 63, 100-105.
   IF = 2.25; MNiSW = 20 (Cited: 9)

*The contribution of my work 25% - involved in planning experiments using GC / MS and their execution, preparation for publication*

6. Paraszkiewicz, K. **Bernat P**. Naliwajski M. Długoński J. 2010, Lipid peroxidation in fungal strain of *Curvularia lunata* exposed to nickel. Arch. Micr. 192, 135-141.
   IF = 1.75; MNiSW = 27 (Cited: 8)

*The contribution of my work 25% - participation in planning experiments using GC / MS and the identification of fatty acids, the preparation of the results for publication*

7. Popiel S., Nawała J., Sankowska M., Witkiewicz Z., **Bernat P**., 2010, Enzymy jako katalizatory rozkładu bojowych środków trujących. Przemysł Chemiczny 89, 1361-1369.
   IF = 0.29; MNiSW = 20 (Cited: 1)

*The contribution of my work 15% - participation in substantive revision of the manuscript*

8. Rene ER, **Bernat P**, Długoński J, Veiga MC, Kennes 2012. Use of Styrene as Sole Carbon Source by the Fungus *Exophiala oligosperma*: Optimization and Modeling of Biodegradation, Pathway Elucidation, and Cell Membrane Composition. Appl Biochem Biotechnol. 168, 1351-1371
   IF = 1.94; MNiSW = 25 (Cited: 0)

*The contribution of my work 25% - participation in planning experiments using GC / MS determination of fatty acid styrene, the preparation of the results for the publication*

9. Jasińska, A; Różalska, S; **Bernat, P**; Paraszkiewicz, K; Długoński, 2012. Malachite green decolorization by non-basidiomycete filamentous fungi of *Penicillium pinophilum* and *Myrothecium roridum.* J. Int Biodet Biodegradation 73, 33-40.

   IF = 2.33; MNiSW = 25 (Cited: 6)

*The contribution of my work 20% - involved in planning experiments using LC / MS technique, determination of malachite green and its derivatives, preparation of results for publication*

10. Słaba M, Gajewska E, **Bernat P**, Fornalska M, Długoński J. 2013. Adaptive alterations in the fatty acids composition under induced oxidative stress in heavy metal-tolerant filamentous fungus *Paecilomyces marquandii* cultured in ascorbic acid presence. Environ Sci Pollut Res. 20, 3423-3434.

    IF = 2.65; MNiSW = 30 (Cited: 2)

    *The contribution of my work 20% - involved in planning experiments using GC / MS technique, determination of fatty acids*

11. Gajewska, E., **Bernat, P**., Długoński, J., Skłodowska, M. 2012. Effect of Nickel on Membrane Integrity, Lipid Peroxidation and Fatty Acid Composition in Wheat Seedlings. J Agron Crop Sci. 198, 286-294.

    IF = 2.43; MNiSW = 35 (Cited: 9)

    *The contribution of my work 30% - involved in planning experiments using GC / MS technique, determination of fatty acids, preparation of results for publication*

12. Jasińska A., **Bernat P**., Paraszkiewicz K. 2013. Malachite green removal from aqueous solution using the system rapeseed press cake and fungus *Myrothecium roridum.* Desalin Water Treat 51, 7663-7671.

    IF = 0.61; MNiSW = 20 (Cited: 0)

    *The contribution of my work 40% - calculate the absorption kinetics of malachite green by the cake, preparing the results for publication*

13. Słaba M, **Bernat P**, Różalska S, Nykiel J, Długoński J. Comparative study on metals induced phospholipids modifications in the heavy metal tolerant filamentous fungus *Paecilomyces marquandii* and their implication for membrane integrity. Acta Biochemica Polonica. 2013;60(4):695-700.

    IF = 1.49; MNiSW = 15 (Cited: 0)

    *The contribution of my work 20% - phospholipid determination*

14. **Bernat P**, Gajewska E, Bernat T, Wielanek M. 2014. Characterisation of the wheat phospholipid fraction in the presence of nickel and/or selenium. Plant Growth Regul 72 163-170.

    IF = 1.67; MNiSW = 30 (Cited: 1)

    *The contribution of my work 60% - involved in planning experiments using LC / MS technique and their execution, determination of phospholipids, preparing the results for publication*

15. Felczak A., **Bernat P**., Długoński J. 2014. Biodegradation of octyltin compounds by *Cochliobolus lunatus* and influence of xenobiotics on fungal fatty acid composition. Process Biochem 49 295-300

    IF = 2.414; MNiSW = 35 (Cited: 0)

    *The contribution of my work 30% - determination of fatty acids and organotin compounds, preparation of results for publication*

16. **Bernat P**, Siewiera P, Soboń A, Długoński J. Phospholipids and protein adaptation of *Pseudomonas* sp. to the xenoestrogen tributyltin chloride (TBT). World J. Microbiol Biotechnol. DOI 10.1007/s11274-014-1659-3.

    IF = 1.262; MNiSW = 20 (Cited: 0)

    *The contribution of my work 50% - a leading participation in execution and interpretation of experiments, preparing the results for publication*

**B) Granted patents, international and national**

No

**C) Inventions and utility models and industrial products that were protected and have been exposed to international and national exhibitions or fairs**

No

**D) Monographs, scientific publications in international or national journals other than in the database referred to in paragraph II A:**

**Polish-language publications in peer-reviewed scientific journals**

**Before the doctorate**

1. Długoński J., Lisowska K., Paraszkiewicz K., Słaba M., **Bernat P**. 2003. Biotransformacja i detoksykacja ksenobiotyków oraz związków pochodzenia naturalnego przez grzyby mikroskopowe. „Biodegradation and detoxification of xenobiotics and compounds of natural origin". Biotechnologia 4, 62-68.

IF = 0; MNiSW = 6

*The contribution of my work 10% - participate in the revision of the review.*

2. **Bernat P**, Długoński J. 2003. Mikrobiologiczne transformacje organicznych związków cyny. „Microbial transformation of organotins". Biotechnologia 4, 69-81.

IF = 0; MNiSW = 6

*The contribution of my work 60% - a leading preparation of the review*

**After the doctorate**

3. **Bernat P**, Długoński J. 2005, Przekształcanie TBT przy udziale grzyba mikroskopowego *Cunninghamella elegans* w obecności NaCl. „Transformation of TBT by microscopic fungus *Cunninghamella elegans* in NaCl presence" Inż. i Ap. Chem. 4, 7-9.

IF = 0; MNiSW = 4

*The contribution of my work 60% - a leading part in the execution of experimental work, development and interpretation of results, preparation of manuscript.*

## Chapters in monographs and books

**Publications after obtaining the degree of doctor of philosophy**

4. Lisowska K., **Bernat P.,** Paraszkiewicz K., Długoński J. 2008. "Zanieczyszczenia pochodzenia naturalnego", W: Mikrobiologia techniczna, cz IX-Mikroorganizmy w ochronie środowiska. Pod red. Libudzisz Z., Kowal K., Żakowska Z. „Contamination of natural origin, in: Technical microbiology, part IX- Microorganisms in environmental protection. Libudzisz Z., Kowal K., Żakowska Z. (Eds)." Wydawnictwo Naukowe PWN. Warszawa ISBN 978-83-01-15223-0. Tom 2 str. 479-499.
5. Długoński J., **Bernat P.,** Lisowska K., Paraszkiewicz K. 2008. "Ksenobiotyki", W: Mikrobiologia techniczna, Pod red. Libudzisz Z., Kowal K., Żakowska Z. „Xenobiotics, in: Technical microbiology, part IX- Microorganisms in environmental protection. Libudzisz Z., Kowal K., Żakowska Z. (Eds)."Wydawnictwo Naukowe PWN. Warszawa ISBN 978-83-01-15223-0. Tom 2 str. 500-517.

**E) Collection catalogs, documentation, research, expert opinions, songs, and works of art**

No

**F) The total impact factor of the Journal Citation Reports list (JCR), by year of publication:** 45.165

**G) Number of citations according to the Web of Science database (WoS):** 108

**H) Hirsch index of all publications, according to the Web of Science (WoS):** 8

**I) Managing international and national research projects and participation in such projects**

**Research projects related to Selected Research Achievements**

1. University of Łódź Grant nr 505/432 in the year 2005
2. University of Łódź Grant nr 505/432 in the year 2006
3. University of Łódź Grant nr 505/441 in the year 2007
4. A key investigator in the special research project " Microbial elimination of toxic organic compounds and heavy metals " (2007 - 2009), No. 31/HIS/2007/02 realized

within the executive program between the Polish Ministry of Science and Higher Education and the Ministry of Education and Science of the Kingdom of Spain.

5. A key investigator in the project NCN No UMO-2011/01/B/NZ9/02898 " Microbial degradation of xenoestrogens and estrogen in the presence of heavy metals and NaCl."

**Other research projects**

1. European Union Grant INCO-Copernicus nr ERBIC IC 15-CT 96-0716 w latach 1997-2000. „ Biodegradation of toxic organic compounds in waste water and accumulation of heavy metals" – investigator
2. European Union Grant INCO-Copernicus nr ERBIC 15CT 980114, 1999-2001. „Characterization of fresh and deposited sludges of the Moscow region and development of strategies of a utilization in composting processes, agriculture or horticulture" – investigator
3. The Development Project No. OR00005305 entitled : "Development of an enzyme disinfectant to remove contamination caused by sarin and mustard gas, 2009-2010." The consortium involved in the project consisted also of the following institutions: the Military Technical Academy (WAT), Military Institute of Chemistry and Radiometry (WIChiR), and POCh SA. – key investigator

**J) International and national awards for scientific or artistic activity**

1. Team Awards of the Rector of the University of Lodz (2007)

2. Team Awards of the Rector of the University of Lodz (2012)

3. The Award for Academics with the greatest achievements in the year 2012 for the publications made by the Faculty of Biology and Environmental Protection, University of Lodz

4. The Award for Academics with the greatest achievements in the year 2013 for the publications made by the Faculty of Biology and Environmental Protection, University of Lodz

5. The award in the competition for the best report presented in the second edition of the Polish National Microbiology Workshop in Health and the Environment Mikrobiot, 2010.

**K) The presentation of papers at international and national conferences**

**Before the doctorate**

1. **Bernat P.,** Długoński J, 2001. Degradacja związków cynoorganicznych przez wybrane szczepy grzybów strzępkowych. Abstract of the presentation In: Book of Abstracts VII Ogólnopolskiego Sympozjum Naukowo-Technicznego „Biotechnologia Środowiskowa": Politechnika Śląska Gliwice, 04-07.12.2001 p. 435-444
2. **Bernat P.,** Długoński J. 2003. Degradacja organicznych związków cyny przez grzyby strzępkowe. Abstract of the poster In sympozjum materials: II Krajowego Kongresu Biotechnologii, Łódź 23-27.06.2003, p. 87

   **After the doctorate**
3. **Bernat P.,** Długoński J. 2004 Optimization of TBT degradation by *Cunninghamella elegans*. International Conference on bioremediation of soil and groundwater. Kraków 5-8.09.2004. . Abstract of the presentation In: Book of Abstracts p. 43
4. **Bernat P.,** Długoński J., Optymalizacja procesu degradacji organicznych związków cyny przez *Cunninghamella elegans*. XXV Zjazd Polskiego Towarzystwa Mikrobiologów Bydgoszcz 23-25.09.2004. Abstract of the presentation In: Post. Mikrobiol., 43, Supl. 1, 440.
5. **Bernat P.,** Długoński J. 2008. Microbial degradation of styrene. I Ogólnopolskie Warsztaty Mikrobiologia w Ochronie Zdrowia i Środowiska Mikrobiot 25-26.09.2008 Łódź. Abstract of the presentation In symposium materials p. 29

**L) Active participation in international and national scientific conferences**

1. **Bernat P.,** Szewczyk R., Milczarek K., Długoński J. 1999. Badanie zdolności szczepów grzybów strzępkowych wyodrębnionych z zanieczyszczonych środowisk do wiązania związków ołowiu i cynku. Abstract of the poster In symposium materials: I Krajowego Kongresu Biotechnologii, Wrocław 20-25.09.1999
2. **Bernat P.,** Szewczyk R., Milczarek K., Długoński J. 1999. Badanie zdolności szczepów grzybów strzępkowych wyodrębnionych ze środowisk zanieczyszczonych do rozkładu

węglowodorów aromatycznych. . Abstract of the poster In sympozjum materials: I Krajowego Kongresu Biotechnologii, Wrocław 20-25.09.1999

3. **Bernat P.,** Długoński J. 2000. Biodegradacja związków cynoorganicznych przez grzyby mikroskopowe pochodzące z odpadów poflotacyjnych i chłodziw. XXIV Zjazd Polskiego Towarzystwa Mikrobiologów, Białystok 12-15.09.2000. . Abstract of the poster In Medical Science Monitor 6 Suplement 3, 146
4. **Bernat P.,** Szewczyk R., Milczarek K., Długoński J. 2000. Biodegradacja pestycydów przez wybrane szczepy grzybów strzępkowych wyodrębnione z odpadów przemysłowych. XXIV Zjazd Polskiego Towarzystwa Mikrobiologów, Białystok 12-15.09.2000. . Abstract of the poster In Medical Science Monitor 6 Suplement 3, 145
5. **Bernat P.,** Długoński J. 2003. Degradation of tributyltin by the filamentous fungus *Cunninghamella elegans.* EFB Bioprocess Engineering Course, Supetar, Chorwacja 07-13.09.2003 p.6
6. Długoński J., **Bernat P.** 2005. Biodegradation of tributyltin chloride (TBT) by filamentous fungi applied for steroid production. Credo Workshop on Endocrine Disrupters. Prague, Czech Republic. Abstracts, 59.
7. **Bernat P**., Szewczyk R., Długoński J. 2007. Kwasy tłuszczowe drobnoustrojów rozkładających modulatory hormonalne jako miernik detoksykacji środowiska. III Krajowy Kongres Biotechnologii. 09-12.09.2007 Poznań. Abstract of the poster In symposium materials p. 43
8. **Bernat P.,** Długoński J. 2007. Biodegradacja butylocyn przez hodowle mieszane grzybów strzępkowych *Cunninghamella elegans* oraz *Curvularia tuberculata*. III Krajowy Kongres Biotechnologii. 09-12.09.2007 Poznań. Abstract of the poster In symposium materials p. 43
9. **Bernat P.,** Długoński J. 2008. Production of gamma-linoleic acid by *Cunninghamella echinulata*. EFB Bioprocess Engineering Course, Supetar, Chorwacja 14-19.09.2008
10. **Bernat P.,** Różalska S., Szewczyk R., Bernat T., Długoński J. 2008. Degradation of styrene by black yeast *Exophiala* sp. I Ogólnopolskie Warsztaty Mikrobiologia w Ochronie Zdrowia i Środowiska Mikrobiot 25-26.09.2008 Łódź. Abstract of the poster In symposium materials p. 73
11. Paraszkiewicz K., **Bernat P**., Naliwajski M., Długoński J. 2008. Stress responses in filamentous fungus *Curvularia lunata* exposed to nickel. I Ogólnopolskie Warsztaty

Mikrobiologia w Ochronie Zdrowia i Środowiska Mikrobiot 25-26.09.2008 Łódź. Abstract of the poster In symposium materials: p. 80

12. Różalska S., **Bernat P.**, Szewczyk R., Długoński J. 2010. Bacterial elimination of 2-chlorophenyl sulfide (CPS) a chemical analog of mustard gas. II Ogólnopolskie Warsztaty Mikrobiologia w Ochronie Zdrowia i Środowiska Mikrobiot 09-10.09.2010. Abstract of the poster In: Sepsis 3(4) 284.
13. **Bernat P.**, Różalska S., Szewczyk R., Długoński J. 2010. Fungal degradation of diazinone. II Ogólnopolskie Warsztaty Mikrobiologia w Ochronie Zdrowia i Środowiska Mikrobiot 09-10.09.2010. Abstract of the poster in: Sepsis 3(4) 257.
14. **Bernat P.**, Siewiera P., Szewczyk R., Długoński J.2013. Changes in phospholipids composition of filamentous fungus *Cunninghamella elegans* in response to tributyltin chloride (TBT). III Ogólnopolskie Warsztaty Mikrobiologia w Ochronie Zdrowia i Środowiska Mikrobiot 17-20.09.2013. Abstract of the poster in: Postępy mikrobiologii 52 supl.1 p. 45
15. Dudzik M., Siewiera P., **Bernat P.,** Długoński J. 2013. Elimination of natural estrogen and identification of the metabolites produced by microscopic fungus *Penicillium chrysogenum* IM 879. Ogólnopolskie Warsztaty Mikrobiologia w Ochronie Zdrowia i Środowiska Mikrobiot 17-20.09.2013. in: Postępy mikrobiologii 52 supl.1 p. 71
16. Nykiel J., Słaba M., **Bernat P.**, Długoński J. 2013. Phospholipid modification in heavy metal tolerant fungus *Paecilomyces marquandii* under copper and nickel exposure. Ogólnopolskie Warsztaty Mikrobiologia w Ochronie Zdrowia i Środowiska Mikrobiot 17-20.09.2013. Abstract of the poster in: Postępy mikrobiologii 52 supl.1 p. 63
17. Zawadzka K., Wrońska N., **Bernat P.**, Felczak A., Lisowska K. 2013. The elimination of carbazole by filamentous fungus *Cunninghamella echinulata* IM 2611. Ogólnopolskie Warsztaty Mikrobiologia w Ochronie Zdrowia i Środowiska Mikrobiot 17-20.09.2013. Abstract of the poster in: Postępy mikrobiologii 52 supl.1 p. 76