

# CURRICULUM VITAE



## PERSONAL INFORMATION

Name LOREDANA BRINZA (MAR. TEPES)  
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Telephone 0044(0)7917997798(UK)  
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Nationality Romanian  
Date of birth 10.11.1978



**Bios:** Continuous improvements of professional, personal and social skills and apply them to a broad variety of interdisciplinary fields

## WORK EXPERIENCE

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

- 2015-present
  - Alexandru Ioan Cuza University of Iasi, Romania
  - Department of Interdisciplinary Research – Field Sciences
  - Researcher
  - Synchrotron and lab based research on applied biogeochemistry; write research proposals, publish articles, compile reports, attendance to conference and workshops, organise conference/meetings.
- 2010-2013
  - Diamond Light Source Ltd., Harwell Science and Innovation Campus
  - Environmental science
  - Post doctoral research associate
  - Synchrotron and lab based research on applied biogeochemistry; write research proposals, publish articles, compile reports, attendance to conference and workshops, synchrotron techniques development, act as users contact at beam line I18 Micro focus Spectroscopy
- 2008- 2010
  - University of Leeds, School of Earth and Environment, Woodhouse Lane, LS29JT, Leeds, United Kingdom
  - Environmental science research
  - Research fellow
  - Laboratory research; Compile reports and publish articles, laboratory management
- 2005-2008
  - University of Leeds, School of Earth and Environment, Woodhouse Lane, LS29JT, Leeds, United Kingdom
  - Environmental science research
  - Research fellow
  - Laboratory research, project management, conference attendances and organization, publish articles, write research proposals, laboratory administrative duties, summer and winter training schools attendance, etc.
- 2004-2005
  - Queens University of Belfast, Queens Marine Laboratory, Portaferry,

Northern Ireland

- Marine and environmental science
- Research fellow
- Laboratory and field research on wastewater bioremediation using algae biomass, publish article, conference attendance.

## EDUCATION AND TRAINING

<div>• Dates (from – to)</div> <div>• Name and type of organisation providing education and training</div> <div>• Principal subjects/occupational skills covered</div> <div>• Title of qualification awarded</div> <div>• Level in national classification</div>	
	<div>• 2005-2010</div> <div>• University of Leeds, School of Earth and Environment, Leeds, United Kingdom</div> <div>• Biogeochemistry; Nanoscience; High Resolution Imaging, Analytical and Synchrotron techniques</div> <div>• Thesis title: Interactions of Mo and V with iron oxyhydroxides nanoparticles in marine setting</div> <div>• Doctor in Philosophy</div> <div>• Ph. D.</div>
	<div>• 2008</div> <div>• University of Leeds, School of Earth and Environment, Leeds, United Kingdom</div> <div>• SDDU (<u>Staff and Departmental Development Unit</u>)</div> <div>• 2 days course in Project Planning and Management</div> <div>• Certificate of attendance</div> <div>• NA</div>
	<div>• 2002 (-2005)-2011</div> <div>• “Gh Asachi” Technical University, Faculty of Industrial Chemistry, Department of Environmental Engineering and Management, Iasi, Romania;</div> <div>• 9 months at Queen’s University of Belfast, Queen’s University Marine Laboratory, Northern Ireland, United Kingdom and</div> <div>• 3 months at University of Leeds, School of Earth and Environment, Leeds, United Kingdom</div> <div>• Recuperative bioremediation of environmental media (water, soil) polluted with heavy metals, using biosorption processes</div> <div>• Doctor in Philosophy in Chemical Engineering</div> <div>• Ph. D. Degree</div>
	<div>2002-2003</div> <div>“Gh. Asachi” Technical University, Faculty of Industrial Chemistry, Department of Environmental Engineering and Management, Iasi, Romania</div> <div>Subjects studied can be seen in the attachment of the M.Sc. diploma (Annex no.3)</div> <div>Thesis title: Biosorption of heavy metals on yeasts.</div> <div>Master of Science in Environmental Management</div> <div>M. Sc. Degree</div>
	<div>• 1997- 2002</div> <div>• “Gh Asachi” Technical University, Faculty of Industrial Chemistry, Iasi, Romania</div> <div>• Subjects studied can be seen in the attachment of the B.Sc. diploma (Annex no.3)</div> <div>• Thesis title: Application of anaerobic bioreactors in liquid effluents de-pollution. Design of a wastewater pretreatment plant from juice mills</div> <div>• Chemical engineer specialized in environmental protection processes</div> <div>• B. Sc. Degree</div>
	<div>• 1997-1999</div> <div>• “Gh. Asachi” Technical University of Iasi, Faculty of Industrial Chemistry, Iasi, Romania</div> <div>• Pedagogy Course; Teaching Methods Course and Scholar Psychology Course</div> <div>• Ministry of Education and Research Certificate</div> <div>• NA</div>
	<div>• 1993-1997</div> <div>• “Emil Racovita” High School, Vaslui, Romania</div> <div>• Chemistry - Biology Department</div> <div>• High School Degree</div>

<b>PERSONAL SKILLS AND COMPETENCES</b>	<ul style="list-style-type: none"> <li>• Baccalaureate Degree</li> </ul> <b>ROMANIAN</b> <b>English</b> excellent Very good Very good
MOTHER TONGUE <b>OTHER LANGUAGES</b> <ul style="list-style-type: none"> <li>• Reading skills</li> <li>• Writing skills</li> <li>• Verbal skills</li> </ul>	
<b>SOCIAL SKILLS AND COMPETENCES</b>	<ul style="list-style-type: none"> <li>➤ Demonstrably able to successfully work alone or as part of team, (preferable as a team);</li> <li>➤ Willing to learn from others;</li> <li>➤ Highly self motivated or high ability to self teach;</li> <li>➤ Ability of living and working with international people in multicultural environments</li> </ul>
<b>ORGANISATIONAL SKILLS AND COMPETENCES</b>	<ul style="list-style-type: none"> <li>➤ Work: Management and organization of geochemical laboratory</li> <li>➤ Conferences: help organize scientific conferences (Leeds and Romania)</li> <li>➤ Administer and control ordering and buying laboratory equipment and consumables</li> </ul>
<b>TECHNICAL SKILLS AND COMPETENCES</b>	<ul style="list-style-type: none"> <li>➤ Computing: MS Office, Dreamwaver, Origin, Surfer, Geochemist Workbench, Visual Minteq, Mantis, Demeter with Strawberry Pearl, PyMca, HDF5, GDA, Dawn, etc.</li> <li>➤ Technical / Analytical Skills: High Resolution SEM; FAAS; ICP-OES; BET; UV- Spectrophotometry and colorimetry; Dynamic Light Scattering; Potentiometric titrations; Synchrotron Techniques (XAS, XRF, XRD and ED-XRD); Use of: anaerobic chamber use, UV sterilizer, flow through analytical systems, microwave digester, ball mills, incubators, hydrothermal ovens, etc.</li> </ul>
<b>OTHER SKILLS AND COMPETENCES</b>	<ul style="list-style-type: none"> <li>➤ organized and highly self-motivated; eager to learn new skills and apply them to a variety of problems and fields;</li> </ul>
<b>DRIVING LICENCE(S)</b>	Yes, B category, clear
<b>ADDITIONAL INFORMATION</b>	Contact persons for references: Prof. Liane G. Benning: <i>University of Leeds, School of Earth and Environment, Woodhouse Lane, LS29JT, Leeds, United Kingdom; Tel:44 (0)113 343 5220; Fax: 44 (0)113 343 5259; E-mail: liane@see.leeds.ac.uk</i> Prof. Peter Statham: <i>National Oceanography Center, Southampton; United Kingdom; Tel: +44 (0) 23 8059267; E-mail: pjs@noc.soton.ac.uk</i> Dr. Tina Geraki/ Prof. Fred Mosselmans: <i>Diamond Light Source LTD, Harwell Science and Innovation Campus, Didcot, OX11 0DE, United Kingdom; Tel: 44(0)1235778898; E-mail: tina.geraki@diamond.ac.uk</i> Prof. Mikel Krom: <i>University of Leeds, School of Earth and Environment, Woodhouse Lane, LS29JT, Leeds, United Kingdom; Tel: 44 (0)113 343 5213; E-mail: m.krom@earth.leeds.ac.uk</i>
<b>ANNEXES</b>	<ol style="list-style-type: none"> <li>1. Published papers, abstracts and conference proceedings</li> <li>2. Research resume</li> <li>3. Diplomas and Certificates copies</li> </ol>
Page 3 - Curriculum vitae of Loredana Brinza	For more information go to <b>Scholar Google:</b> <a href="https://scholar.google.com/citations?hl=en&amp;user=qCOzZ20AAAAJ">https://scholar.google.com/citations?hl=en&amp;user=qCOzZ20AAAAJ</a> <b>Research Gate:</b> <a href="https://www.researchgate.net/profile/Loredana_Brinza/">https://www.researchgate.net/profile/Loredana_Brinza/</a> <b>Researchid:</b> <a href="http://www.researcherid.com/rid/F-9765-2012">http://www.researcherid.com/rid/F-9765-2012</a>

## **Annex 1: Published papers, abstracts and conference proceedings**

**H-index = 9 (WoS)**

### **Published papers:**

1. Loredana Brinza, Hong P. Vu, Samuel Shaw, J. Fred W. Mosselmans, Liane G. Benning, 2015, Effect of Mo and V on the Hydrothermal Crystallization of Hematite from Ferrihydrite: An in Situ Energy Dispersive X-ray Diffraction and X-ray Absorption Spectroscopy Study, **Crystal Growth and Design**, 15 (10), 4768–4780, DOI: 10.1021/acs.cgd.5b00173, (IF= 4.055; AIS= 0.834; **Q1**);
2. Mark E Hodson, Stuart Black, Loredana Brinza, Daniel Carpenter, Denise C. Lambkin, J. Fred W Mosselmans, Barbara Palumbo-Roe, Paul F Schofield, Tom Sizmur, Emma A Versteegh, 2014, Biology as an agent of chemical and mineralogical change in soil, **Procedia Earth and Planetary Science**, 10, 114 – 117
3. Loredana Brinza, Frederick J. W. Mosselmans, Paul F. Schofield, Erica Donner, Enzo Lombi, Mark E. Hodson, 2014, Can earthworm-secreted calcium carbonate immobilise Zn in contaminated soils?, **Soil Biology and Biochemistry**, 74, 1-10, DOI: 10.1016/j.soilbio.2014.01.012, (IF=4.857; AIS=1.342, **Q1**)
4. L. Brinza, P. F. Schofield, M. E. Hodson, S. Weller, K. Ignatyev, K. Geraki, P. D. Quinn and J. F. W. Mosselmans, 2014, Combining  $\mu$ XANES and  $\mu$ XRD mapping to analyse the heterogeneity in calcium carbonate granules excreted by the earthworm *Lumbricus terrestris* **Journal of Synchrotron Radiation**, 01/2014, 21, 235-41; DOI:10.1107/S160057751303083X, (IF= 3,011; AIS= 1,153, **Q1**)
5. Hong Phuc Vu, Samuel Shaw, Loredana Brinza, Liane G Benning, 2013, Partitioning of Pb (II) during goethite and hematite crystallisation: implication for Pb transport in natural systems, 2013 **Applied Geochemistry**, 39, 119-128; DOI:10.1016/j.apgeochem.2013.10.001 (IF=2.581; AIS=0.775, **Q2**)
6. Loredana Brinza, Paul D. Quinn, Paul F. Schofield, Frederick J. W. Mosselmans, Mark E. Hodson, 2012, Incorporation of strontium in earthworm-secreted calcium carbonate granules produced in strontium-amended and strontium-bearing soil, **Geochimica et Cosmochimica Acta**, 113 21-37, DOI: 10.1016/j.gca.2013.03.011, (IF= 4.609, AIS= 1.801, **Q1**);
7. Sofia Diaz-Moreno, M. Amboage, R. Boada-Romero, L. Brinza, G. Cibin, A. Dent, A. Freeman, T. Geraki, S. Hayama, F. Mosselmans, S. Parry, P. Quinn and S. Ramos (2012), X-Ray Absorption Spectroscopy at Diamond Light Source: Three Complementary Beamlines to Deliver a Comprehensive Service, **XAS Research Review**, 3
8. Rob Raiswell, Hong Phuc Vu, Loredana Brinza, Liane Benning, (2010), The determination of Fe in ferrihydrite by ascorbic acid extraction: methodology, dissolution kinetics and loss of solubility with age and de-watering, **Chemical Geology**, Vol 278, 1-2, 70-79 doi:10.1016/j.chemgeo.2010.09.002, (IF= 3.347 , AIS= 1,514, **Q1**);
9. Vu Hong Phuc, Shaw Samuel, Brinza Loredana, Benning Liane G., (2010), The crystallization of hematite (a-Fe<sub>2</sub>O<sub>3</sub>) under alkaline condition: the effects of Pb" **Crystal Growth and Design**, Vol 10, No 4, 1544–1551, DOI: 10.1021/cg900782g, (IF= 4.055; AIS= 0.834, **Q1**);
10. Loredana Brinza, Charlotta A. Nygard, Matthew J. Dring, Liane G. Benning, Maria Gavrilescu, (2009), Cadmium tolerance and adsorption by the marine brown alga *Fucus vesiculosus* from the Irish Sea and the Bothnian Sea, **Bioresource Technology**, Vol. 100, No 5, 1727-1733, doi:10.1016/j.biortech.2008.09.041, (IF= 5,651, AIS= 1.089, **Q1**);
11. Loredana Brinza, Liane G. Benning, Peter J. Statham, (2008), Adsorption studies of Mo and V onto ferrihydrite, **Mineralogical Magazine**, Vol. 72, No1, 107–110; doi:10.1180/minmag.2008.072.1.385, (IF= 1,285, AIS= 0.546, **Q2**);
12. Loredana Brinza, Matthew J. Dring, Maria Gavrilescu, (2007), Marine micro and macro algal species as biosorbents for heavy metals treatment - review, **Environmental Engineering and Management Journal**, Vol. 6, No. 3, 237-251, (IF= 1.096, AIS=0.073, **Q4**);
13. Simona Pintilie, Loredana Brinza, Camelia Betianu, Lucian Vasile Pavel, Florina Ungureanu, Maria Gavrilescu, (2007), Modelling and simulation of heavy metals transport in water and sediments, **Environmental Engineering and Management Journal**, Vol. 6, No. 2, 153-161, , (IF= 1.096, AIS=0.073, **Q4**);
14. Camelia Betianu, Loredana Brinza, Vasile Lucian Pavel, Maria Gavrilescu, (2007) Partition and sorption of heavy metals to soils, **Analele USAMV, vol. 50, seria Agronomie**, Editura „Ion Ionescu de la Brad”, Iasi, 2007, ISSN 1454-7414
15. Loredana Brinza, Matthew J. Dring, Maria Gavrilescu, (2005), Biosorption of Cu (2+) ions from aqueous solution by-*Enteromorpha* sp, **Environmental Engineering and Management Journal**, Vol.4, No.1, 41-51, (IF= 1.096, AIS=0.073, **Q4**);

16. Loredana Brinza, Maria Gavrilescu, (2003), pH Effect on the Biosorption of Cu (2+) from Aqueous Solution by *Saccharomyces Cerevisiae*, **Environmental Engineering and Management Journal**, Vol.2, No.3, 243-254, (IF= 1.096, AIS=0.073, Q4);
17. Loredana Brinza, Maria Gavrilescu, Studies of Heavy Metal Recovery by Biosorption, (2003), **Bulletin of the Polytechnic Institute of Iasi**, Tomul XLVII (LII), fasc. 1B, *Chemistry and Chemical Engineering*, 250-256; ISSN: 0254 - 7104

#### Published abstracts

1. Loredana Brinza, J. Fred W. Mosselmans, Paul F. Schofield, Erica Donner, Enzo Lombi, Mark E. Hodson, Zn immobilization by *Lumbricus terrestris* calcium carbonate biomineralized granules, (2013), **Mineralogical Magazine**, 77(5), 774, (IF= 1,285, AIS= 0.546);
2. Loredana Brinza, J. Fred W. Mosselmans, Paul F. Schofield, Erica Donner, Enzo Lombi, David Paterson, Paul D. Quinn, Tina Geraki, Mark E Hodson, Sr, Cu and Zn incorporation in earthworm synthesized calcium carbonate granules - a  $\mu$ XAS and  $\mu$ S-XRF investigation, (2012), **EMC2012, 2-6th September 2012**, Frankfurt, Germany
3. Loredana Brinza, J. Fred W. Mosselmans, Paul F. Schofield, Paul D. Quinn And Mark E. Hodson, (2011), Strontium incorporation into carbonate granules secreted by earthworms, **Mineralogical Magazine**, 581, (IF= 1,285, AIS= 0.546);
4. Loredana Brinza, Sam Shaw, Liane. G. Benning, (2008), The effect of molybdenum on the transformation kinetics of ferrihydrite to hematite: An *in situ* ED-XRD approach (Abstract) - **Geochimica et Cosmochimica Acta**, Vol. 72, No. 12S, A115, (IF= 4,609, AIS= 1.801);
5. Loredana Brinza, Liane. G. Benning, Peter. J. Statham, (2007), Characterisation of Mo and V interactions with ferrihydrite as an analogue for deep-sea hydrothermal plumes processes (Abstract) - **Geochimica et Cosmochimica Acta**, Vol. 71, No. 15S, A121, (IF= 4.609, AIS= 1.801);
6. Loredana Brinza, Liane. G. Benning, Peter. J. Statham, (2007), The mechanism of molybdenum uptake by ferrihydrite and its fate during the transformation to hematite, (Abstract) - **Frontiers in Mineral Sciences**, June 2007
7. Loredana Brinza, Matthew J. Dring, Maria Gavrilescu, (2005), Ability of different algal species to uptake heavy metals from wastewater (Abstract), **The Phycologist**, No 68, Spring 2005, 30

#### Other publications:

1. Loredana Brinza, 2010, Interactions of molybdenum and vanadium with iron nanoparticles, PhD thesis, University of Leeds, United Kingdom, ISBN: 978-0-85731-019-4 (full thesis at: [http://etheses.whiterose.ac.uk/1082/1/LBrinza\\_PhD\\_thesis.pdf](http://etheses.whiterose.ac.uk/1082/1/LBrinza_PhD_thesis.pdf))
2. Loredana Brinza, 2011, Bioremedierea recuperativă prin biosorbție a factorilor de mediu poluați cu metale (Recuperative Bioremediation Of Metals From Environmental Components using Biosorption), PhD thesis, Gh Asachi, Technical University Iasi, Romania (Thesis resume at: [http://www.tuiasi.ro/users/110/TD\\_BrinzaL2011.pdf](http://www.tuiasi.ro/users/110/TD_BrinzaL2011.pdf))

#### Research projects and research projects affiliation: 25 from which 6 as principal investigator and 19 as team member

1. Loredana Brinza, Tina Geraki, Liane G Bening, SP15771/2017, Microscopic and spectroscopic investigation of Zn uptake by algae at Diamond Light Source, LTD, UK; Dr. Loredana Brinza – PI, Dr Tina Geraki and Prof. Dr. Liane G Benning – team members (July 2017)
2. Science & Technology Facilities Council (STFC) research grant no SP5906-1/2013 for beam time at the Diamond Light Source, UK Synchrotron facility at beam line B18- Core XAS - Pb and Zn XAS in iron based minerals, Prof. Mark E Hodson-PI, Prof. Fred Mosselmans, David Hughes, Dr. Loredana Brinza, Dr. Liz Shaw, 26 June 2013 - team member.
3. Science & Technology Facilities Council (STFC) research grant no SP5906-1 for beam time at the Diamond Light Source, UK Synchrotron facility at beam line B18- Core XAS - Pb and Zn XAS in iron based minerals, Prof. Mark E Hodson-PI, Prof. Fred Mosselmans, David Hughes, Dr. Loredana Brinza, Dr. Liz Shaw, 20 March 2013 - team member.
4. Science & Technology Facilities Council (STFC) research grant no NT3894-1 at the Diamond Light Source, UK Synchrotron facility at beam line i18-Microfocus spectroscopy - The effect of Mg and P on the mineralogy of calcium carbonate bio mineralized granules: a micro spatial characterization by s-XRD and s-Ca XANES, Dr. Loredana Brinza-PI, Prof. Fred Mosselmans, Dr. Paul F. Scofield, Prof.



Mark E. Hodson, principal investigator.

5. Science & Technology Facilities Council (STFC) research grant no RCaH R18, 3 months access to Research Complex at Harwell, UK to investigate "Microscopic and spectroscopic investigation of biomineralized calcium carbonates polymorphs" Dr. Loredana Brinza-PI, Prof. Fred Mosselmans, 15.09.2012-15.12.2012–principal investigator
6. Science & Technology Facilities Council (STFC) research grant no CM-5712-5 at the Diamond Light Source, UK Synchrotron facility to test improvements to s-XRD technique at the beam line i18-Microfocus spectroscopy, Prof. Fred Mosselmans, Dr. Loredana Brinza, Dr. Tina Geraki, Dr. Konstantin Ignatiev, December 2012– team member.
7. Science & Technology Facilities Council (STFC) research grant No SP7755 at the Diamond Light Source, UK Synchrotron facility to carry out XAS and s-XRD experiments on "Ca-XANES maps and synchrotron diffraction on earthworms biomineralized calcium carbonates granules "at the beam line i18-Microfocus spectroscopy, Prof. Fred Mosselmans -PI, Loredana Brinza, Dr. Paul F. Schofield; Prof. Mark E Hodson, 20-24th September 2012– team member.
8. French Société civile research grant no EC-870 for beamtime at the ESRF, France to carry out research on "Se-XAS in UK and China Se-rich shells" at the beamline ID22. Prof. Liane G Benning -PI, Dr Loredana Brinza, Dr Samwel Allsorn, 22-26th June 2012 - team member
9. Science & Technology Facilities Council (STFC) grant No NT5731-1 for 3 days beam time at the Diamond Light Source, UK Synchrotron facility to carry out XAS experiments on "Zn and Cu sequestration in earthworm excreted calcium carbonates granules: elemental XRF maps, Ca, Zn and Cu XAS " at the beam line i18-Microfocus spectroscopy, Dr. Loredana Brinza-PI, Prof. Fred Mosselmans; Dr. Paul F. Schofield; Dr. Paul D. Quinn, Prof. Mark E Hodson, 20-24th February 2012– principal investigator.
10. Australian Synchrotron grant No AS121/XFM/4559 for beamtime at the Australian Synchrotron Facility to carry out elemental XRF, Zn and Cu-XANES mapping on "Metal incorporation in earthworm-secreted calcium carbonate granules", Dr. Erica Donner-PI, Dr. Enzo Lombi, Prof. Fred Mosselmans; Dr. Paul D. Quinn; Dr. Paul F. Schofield; Dr. Mark E Hodson, 2-6th February 2012 - team member;
11. Science & Technology Facilities Council (STFC) grant No NT2123-1 for beam time at the Diamond Light Source, UK Synchrotron facility to carried our XAS experiments on "Zn sequestration in earthworm excreted calcium carbonates granules" at the beam line i18-Microfocus spectroscopy, Dr. Loredana Brinza-PI, Prof. Fred Mosselmans, Dr. Paul D. Quinn; Dr. Paul F. Schofield; Prof. Mark E Hodson, May 2011,– principal investigator;
12. Science & Technology Facilities Council (STFC) grant No SP6744-1 for beam time at the Diamond Light Source, UK Synchrotron facility to carried our XAS experiments on "Selenium in shales: where and who is the bad guy?" Prof. Liane G Benning (PI), Adriana Matamoros Velosa, Dr. Loredana Brinza, 25-31 May 2011; team member;
13. Science & Technology Facilities Council (STFC) grant No CM-1946-2 (2065-3) for beam time at the Diamond Light Source, UK Synchrotron facility to carried out XAS experiments on "Incorporation of V into iron oxyhydroxides" at the beam line i18-Microfocus spectroscopy, Dr. Loredana Brinza -PI; Prof. Fred Mosselmans, Dr. Tina Geraki, 4 August 2011– principal investigator;
14. Science & Technology Facilities Council (STFC) grant No NT2000 for beam time at the Diamond Light Source, UK Synchrotron facility to carried out XAS experiments on "Incorporation of Sr into earthworm secreted calcium carbonate" at the beam line i18-Microfocus spectroscopy, Prof. Fred Mosselmans-PI; Dr. Loredana Brinza; Dr. Paul D. Quinn; Dr. Paul F. Schofield; Prof. Mark E Hodson, 5-8th February 2011– team member as research associate;
15. AMASE (Arctic Mars Analog Svalbard Expedition) grant founded by NASA (National Aeronautics and Space Administration) and JPL (Jet Propulsion Lab), Hans Amundsen (Expedition Leader Norway), Andrew Steele (Science Leader – Carnegie Institution of Washington), Marilyn Fogel (Management team – Carnegie Institution of Washington), Pan Conrad (Management team) and Liane Benning (Management team – University of Leeds, UK (2009), 2.22M US \$, – postdoc collaborator based at the Earth and Biosphere Institute and School of Earth and Environment at the University of Leeds (March-May 2009)
16. UK Natural Environment Research Council 'Weathering Science Consortium' NE/C004566/1 Biologically-Mediated Weathering of Minerals from Nanometre Scales to Environmental Systems, (Prof. Steward Banwart, University of Sheffield, PI; Prof. Bruce Yardley, Prof. Liane G. Benning, Prof. Rik Brydson; University of Leeds universities group leaders and Co-Investigator), 2006-2011, 364214 GBP – team member as research fellow at Leeds with Prof. Liane G Benning, March-May 2009;
17. Emeritus Fellowship funded by Leverhulme Trust; Bioavailable nanoparticulate iron in icebergs, Prof. Rob Raiswell -PI; 2007-2009, ca 22000GBP, - team member as research associate, Jan-Feb 2009;
18. Council for the Central Laboratory of the Research Councils (CCLRC) grant no 50115 for beamtime at

- 16.4 time-resolved Energy Dispersive-X-Ray Diffraction beamline at Synchrotron Radiation Source (SRS) Daresbury Laboratory, UK to carry out research on "In situ hydrothermal mineral transformation of iron oxyhydroxides", Prof. Liane G. Benning - PI, Loredana Brinza, Hong Phuc Vu, 2008, team member as research fellow
19. Council for the Central Laboratory of the Research Councils (CCLRC) grant no 47113 on 16.5 - Ultra-Dilute Spectroscopy beamline at UK synchrotron, Daresbury Laboratory, UK to carry out research on "Pb-XAS in iron oxyhydroxides", Prof. Liane G Benning, Loredana Brinza, Hong Phuc Vu, 2007, team member as research fellow
  20. Council for the Central Laboratory of the Research Councils (CCLRC) grant no 47113 on 15.1 Dilute spectroscopy beamline at UK synchrotron, Daresbury Laboratory, UK to carry out research on "Mo-XAS in iron oxyhydroxides", Prof. Liane G. Benning, Hong Phuc Vu, Loredana Brinza, 2007, - team member as research fellow
  21. European Community under the Sixth Framework (FP6), Marie Curie Actions Early-Stage Training (EST) Fellowships; grant name BIOTRACS (Bio-transformation of trace elements in aquatic systems) working on "The interaction of trace metals and iron-based nanoparticles in contrasting marine settings" contract number MEST-CT-2004-514262, 2220111 E; Oct 2005 - Dec 2008 – team member as research fellow; see website: [http://cordis.europa.eu/result/rcn/50263\\_en.html](http://cordis.europa.eu/result/rcn/50263_en.html)
  22. Marie Curie Individual fellowship at the University of Leeds, Leeds, United Kingdom funded by the European Community under the Fifth Framework (FP5): EU Marie Curie BIOASSESS "Biodiversity assessment and conservation science" Grant Reference Number EVK2-CT-2000-57122, 285000 E, Feb 2005 - April 2005 - team member as research fellow; see web: [http://cordis.europa.eu/project/rcn/72350\\_en.html](http://cordis.europa.eu/project/rcn/72350_en.html)
  23. Marie Curie Training Site fellowship at the Queen's University of Belfast, Belfast, Northern Ireland, United Kingdom funded by the European Community under the Fifth Framework (FP5): EU Marie Curie Action, "Marine macroalgae : physiological and biochemical ecology, molecular, phylogeny, and aquaculture" Grant Reference Number HPMP-CT- 2001-00268; 240000E; April 2004- Jan 2005 – team member as research fellow. See web: [http://cordis.europa.eu/project/rcn/64248\\_en.html](http://cordis.europa.eu/project/rcn/64248_en.html)
  24. National Council for Scientific Research in Higher Education, Modeling and simulating processes for liquid fluxes depollution, regarding property transfer. GRANT CNCSIS, tip A, contract 33557/2003, Tema 21, cod CNCSIS 316, PI: prof. dr. eng. Maria Gavrilescu, - team member as PhD
  25. National Council for Scientific Research in Higher Education, Bioremediation of environmental polluted media using chemical engineering and biotechnologies specific processes. GRANT CNCSIS, tip A, contract 40222/2003, Tema 13, cod CNCSIS 774 PI: prof. dr. eng. Matei Macoveanu, team member as PhD.

#### ***Awarded fellowships and merits:***

1. Prized participation to Present Environment and Sustainable Development - the XII-th edition of the International Symposium: Loredana Brinza, Carmen Madalina Cismasiu, Ioan Ardelean, Madalina Paiu, Georgiana Bulai, Iuliana Gabriela Breaban, Microbial noble metals bioleaching: in vitro preliminary results for future environmental friendly dissolution techniques, 2-4th June 2017, Iasi, Romania - prized poster;
2. Elsevier Reviewer Recognition Award 2016 in recognition of review made for Applied Geochemistry;
3. Prized participation to Diamond Light Source Synchrotron User Meeting: Loredana Brinza, J. Fred W. Mosselmans, Paul F. Schofield, Paul D. Quinn and Mark E. Hodson, Earthworms immobilise Sr within bio-synthesised calcium carbonate granules, Synchrotron User Meeting 7-8th Sep. 2011 - prized poster;
4. Research Student Publication Prize competition awarded letters of commendation sent by the Head of School of Earth and Environmental, University of Leeds, Feb. 2011;
5. Awarded *BIOTRACS* Early-Stage Training (EST) Fellowships funded by the European Community under the Sixth Framework (FP6), Marie Curie Actions, working on "*The interaction of trace metals and iron-based nanoparticles in contrasting marine settings*" contract number MEST-CT-2004-514262, 2005 – team member;
6. Awarded Marie Curie Individual fellowship at the University of Leeds, Leeds, United Kingdom funded by the European Community under the Sixth Framework (FP6): *EU Marie Curie Grant Reference Number EVK2-CT-2000-57122, 2005 - team member*;
7. Awarded Marie Curie Training Site fellowship at the Queen's University of Belfast, Belfast, Northern Ireland, United Kingdom funded by the European Community under the Sixth Framework (FP6): *EU Marie Curie Grant Reference Number HPMP-CT- 2001-00268, 2004 - team member*.

#### ***Training schools and courses:***

1. "How to write a successful Horizon 2020 Project" and "Horizon 2020 Project Management" at the Alexandru Ioan Cuza University of Iasi, Romania, 10th-13rd Oct 2016 organized by Al. I. Cuza University of Iasi, Romania, the University of Berge, Norway, EEA Grants and Norway Grants
2. Broadening Horizons Workshop for Post-Docs organised by Diamond Light Source LTD, 25-26th Feb. 2013
3. Phyton Course 2011 organised by Diamond Light Source LTD, August 2011
4. XAS data analysis Course organised by Diamond Light Source LTD, 14-16th Nov. 2011
5. Laboratory and cryogenic Gases Safety awareness Training Workshop organised by Diamond Light Source LTD, 5th Oct. 2010
6. Practical Compressed Gases Safety Awareness Training Workshop: connecting regulators and cylinder setup organised by Diamond Light Source LTD, 5th Oct. 2010
7. Safety awareness Training Workshop: Liquid Nitrogen Practical Decanting, organised by Diamond Light Source LTD, 5th Oct. 2010
8. Raman Course organised by Renishaw at the University of Warwick, 23 Sept. 2010
9. Research Funding Proposals organised by [Staff and Departmental Development Unit](#), The University of Leeds, 11th Feb. 2010;
10. Managing People and Projects organised by [Staff and Departmental Development Unit](#), The University of Leeds, 21-22nd April, 2010;
11. Project Planning and Management organised by [Staff and Departmental Development Unit](#), The University of Leeds, 7-8th Feb 2008;
12. International winter School "Fundamentals of Thermodynamics and Kinetic of Water/ Mineral Reactions", organised by Min-Mingro at La Palma, Spain, 21-26th Nov. 2007;
13. International Summer School SuperSTEM organised by Daresbury Laboratories, UK, Sept. 2006.

#### **Reviewer for:**

1. Applied Geochemistry (Elsevier reviewer Recognition certificate awarded in 2016)
2. Journal of Environmental Management;
3. Environmental Engineering and Management Journal;
4. Bioresource Technology;
5. Desalinization;
6. Archives of Microbiology;
7. Langmuir
8. Industrial and Engineering Chemical Research

#### **Professional affiliations**

- Committee Member of Environmental Geochemistry Group, Special Interest Group of Mineralogical Society of Great Britain and Ireland, 2013-2016
- Member of European Association of Geochemistry 2009-present
- Member of Geochemical Society, 2008-2009.
- Member of Mineralogical Society, 2007 and 2008;
- Member of British Phycological Society, 2005;
- Member of the Academic Organization of Environmental Engineering and Sustainable Development, OAIMDD, 2003- 2005;

#### **Invited (keynote) speaker talks:**

1. Loredana Brinza, Synchrotron XAS,  $\mu$ -XRF and ED-XRD applied in biogeochemistry research, National Institute of Material Physics, Magurele, Romania, 22 January, 2014
2. Loredana Brinza et al, Advanced synchrotron  $\mu$ -XAS,  $\mu$ -XRF and  $\mu$ -XRD techniques applied to environmental mineralogy research, Research in Progress Meeting, Durham, UK, 25 September 2014

#### **Conferences participation**

1. Loredana Brinza, Carmen-Madalina Cismasiu, Ioan Ardelean, Madalina Paiu, Georgiana Bulai, Iuliana-Gabriela Breaban.: Microbial noble metals bioleaching: in vitro preliminary results for future environmental friendly dissolution techniques, 2-4th June 2017, Iasi, Romania
2. Loredana Brinza, Hong Phuc Vu, Mariana Neamtu, Liane G. Benning Mo and V adsorption onto ferrihydrite: experimental vs. simulation, MINSOC-EMG: Research in Progress Meeting 9th June 2016, School of Earth Sciences, Wills Memorial Building, University of Bristol, UK



3. Mark E Hodson, Stuart Black, Loredana Brinza, Daniel Carpenter, Denise C. Lambkin, J. Fred W Mosselmans, Barbara Palumbo-Roe, Paul F Schofield, Tom Sizmur, Emma A Versteegh, 2014, Biology as an agent of chemical and mineralogical change in soil, Geochemistry of the Earth's surface GES-10, Paris, France, 18-23 August, 2014, oral presentation; <http://ges10.web-events.net>
4. Loredana Brinza, J. Fred W. Mosselmans, Paul F. Schofield, Erica Donner, Enzo Lombi, Mark E. Hodson, Zn immobilization by *Lumbricus terrestris* calcium carbonate biomineralized granules, Goldschmidt 2013, 25-30<sup>th</sup> August 2013, Florence, Italy – oral presentation
5. Loredana Brinza, J. Fred W. Mosselmans Paul F. Schofield, Paul D. Quinn, Mark E. Hodson, Qualitative and quantitative approaches of strontium incorporation into earthworm bio mineralized calcium carbonates granules, Diamond Light Source Science Away Day, Sheepdrove Eco Conference Centre, Lambourne, UK, 10th June 2013, short communication.
6. J. Fred W. Mosselmans, Loredana Brinza, Paul F. Schofield, Sophie Weller, Konstantin Ignatyev, Tina Geraki, Mark E. Hodson, New developments in micro-X-ray diffraction and XANES mapping at Diamond's I18 beamline as applied to the mineralogy of earthworm granules, Minerals for Life, 17-18th June 2013, Edinburgh, UK, oral presentation
7. Loredana Brinza, J. Fred W. Mosselmans, Paul F. Schofield, Erica Donner, Enzo Lombi, David Paterson, Paul D. Quinn, Tina Geraki, Mark E Hodson, Sr, Cu and Zn incorporation in earthworm synthesized calcium carbonate granules - a  $\mu$ XAS and  $\mu$ S-XRF investigation, EMC2012, 2-6th September 2012, Frankfurt, Germany - oral presentation;
8. Loredana Brinza, J. Fred W. Mosselmans, Paul F. Schofield, Erica Donner, Enzo Lombi, David Paterson, Paul D. Quinn Tina Geraki and Mark E. Hodson, Metals incorporation in earthworm-secreted calcium carbonate granules, Diamond Light Source Science Away Day 2012, Sheepdrove Eco Conference Centre, Lambourne, UK – June 2012, - poster
9. Loredana Brinza, J. Fred W. Mosselmans, Paul F. Schofield, Paul D. Quinn and Mark E. Hodson, Earthworms immobilise Sr within bio-synthesised calcium carbonate granules, Synchrotron User Meeting 7-8 September 2011 - prized poster;
10. Loredana Brinza, J. Fred W. Mosselmans, Paul F. Schofield, Paul D. Quinn and Mark E. Hodson, Strontium incorporation into carbonate granules secreted by earthworms. Mineralogical Magazine, 75 581 Goldschmidt 2011 Conference, 14-19 August 2011, Prague - oral presentation;
11. Loredana Brinza, Liane G. Benning, Peter J. Statham, Mo and V biosorption onto ferrihydrite, 'Global Biogeochemical Cycles - A Leeding View' Symposium, August 27-29, 2008, Leeds, United Kingdom – poster;
12. Loredana Brinza, Liane G. Benning, Peter J. Statham, Biosorption studies of Mo and V onto ferrihydrite, Geochemistry of the Earth's Surface (GES 8), August 18–22, 2008, Natural History Museum, London, United Kingdom – oral presentation;
13. Loredana Brinza, Sam Shaw, Liane G. Benning, The effect of molybdenum on the transformation kinetics of ferrihydrite to hematite: An *in situ* ED-XRD approach (oral) Goldschmidt 2008 - "From sea to sky", July 13-18, 2008, Vancouver, Canada - oral presentation;
14. Loredana Brinza, Sam Shaw, Liane G. Benning, Peter J. Statham, *In situ* ED-XRD kinetic studies of ferrihydrite transformation to hematite; molybdenum effect and partitioning, Environmental Mineralogy Group of the Mineralogical Society Research in Progress Meeting, May 1, 2008, The Natural History Museum, London, United Kingdom – oral presentation;
15. Loredana Brinza, Maria Gavrilescu, Biotechnologies in environmental protection: soil remediation and water treatment biotechnologies applicable for heavy metals depollution. The Days of Faculty of Chemical Engineering and Environmental Protection; November 15-16, 2007, Iasi, Romania;
16. Loredana Brinza, Liane. G. Benning, Peter. J. Statham, Characterisation of Mo and V interactions with ferrihydrite as an analogue for deep-sea hydrothermal plumes processes, Goldschmidt 2007- "atoms to planet", August 20-24, Cologne, Germany; - poster
17. Loredana Brinza, Liane. G. Benning, Peter. J. Statham, The mechanism of molybdenum uptake by ferrihydrite and its fate during the transformation to hematite, Frontiers in Mineral Sciences, June 26-28, 2007, Cambridge, United Kingdom – oral presentation;
18. Otilia Brinza, Loredana Brinza, Liane G. Benning, Maria Gavrilescu, Studies regarding biosorption on heavy metals on marine algae, Conference of "Gh. Asachi" Technical University Iasi - November 15, 2005, Iasi, Romania – oral presentation;
19. Loredana Brinza, Maria Gavrilescu, Matthew Dring, Biosorption Cu (II) and Cr (VI) by dead *Fucus vesiculosus*, University of Minho, September 25, 2005, Portugal - short communication;
20. Loredana Brinza, Otilia Brinza, Maria Gavrilescu, Liane G. Benning, Matthew J. Dring, Heavy metals biosorption by marine brown algae: *Ascomyllum nodosum*, *Fucus vesiculosus*, *Sargassum muticum*, *Laminaria digitata*, , University of Minho, September 25, 2005, Portugal - short communication;

21. Loredana Brinza, Matthew J. Dring, Maria Gavrilescu, Ability of different algal species to take up heavy metals from wastewater, Annual Meeting of British Phycological Society, University of Birmingham, January 5-7, 2005, United Kingdom – poster;
22. Loredana Brinza, Matthew Dring, Maria Gavrilescu, Biosorption of Cu (2+) ions from aqueous solution by *Enteromorpha sp*, 2nd International Conference on Environmental Engineering and Management, Faculty of Industrial Chemistry, Department of Environmental Engineering Iasi, September 23-36, 2004, Iasi, Romania - poster;
23. Loredana Brinza, Maria Gavrilescu, Studies on Heavy Metal Removal by Biosorption -, 3<sup>rd</sup> Conference of Faculty of Industrial Chemistry "90 Years of Chemical Engineering Education in Iasi", November 2002, Iasi, Romania – poster.



27/11/2017

## Annexe: Research resume

### **Research interest**

- Synchrotron techniques used in biogeochemistry: Metal speciation within solid phase (bio and geo matrixes): synchrotron XAS and XRF; Mineral crystallization (nucleation and growth) kinetic and thermodynamics: synchrotron ED-XRD; Complementary synchrotron characterization techniques: i.e.,  $\mu$ -XANES mapping and  $\mu$ -XRD mapping
- Nanoparticles synthesis and characterization for specific applications. Amorphous nanoparticles stabilization, size and shape control for specific application
- Biomass as byproducts for environmental friendlier biotechnologies for soil and wastewater treatments; chemical and process engineering
- Solid – fluid interactions: mechanisms (uptake mechanisms: adsorption, ion exchange, accumulation, precipitation or dissolution mechanisms), kinetics and thermodynamics;
- Geochemical and molecular modeling

### **Previous affiliations and experiences:**

2010-2013- at Diamond Light Source, UK in the group of Fred Mosselmans

The project at Diamond Light Source focused on metal incorporation within calcium carbonate granules produced by the earthworms, *Lumbricus terrestris*. The research work involved quantitative and qualitative evaluation of metals (e.g., Sr, Zn and Mn) immobilized within the carbonates granules using synchrotron X-Ray Adsorption Spectroscopy and X-Ray Fluorescence spectrometry, High Resolution Microscopy, Raman and FTIR spectroscopy, X-Ray Diffraction, and other techniques.

2005-2010 - at the [University of Leeds](#), School of Earth and Environment UK - in the group of [Prof. Liane G. Benning](#):

- Amorphous and crystalline nano-minerals synthesis and characterization;
- Liquid-solid surface interactions; use of high resolution techniques for nano-particles characterization (e.g., Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), *Dynamic Light Scattering (DLS)*, *BET*, *high resolution potentiometric titrations*, X-Ray Diffraction (XRD); X-Ray Adsorption Fine Structure Spectroscopy, etc.);
- Kinetics and thermodynamics of mineral transformation (hydrothermal experiments), adsorption and ion exchange mechanisms;
- Use of bio-geo-chemical modelling software to simulate the chemistry of different elements and their interaction with various substrates.
- Administer and control ordering and buying laboratory equipment and consumables

2006 and 2007 for 4 months at the University of Southampton, [National Oceanography Centre](#), UK - in the group of [Prof. Peter J. Statham](#).

- analytical methods development for metal concentration and analysis in complex matrices (i.e., seawater)

2002-2005 at "[Gheorghe Asachii](#) "Technical University of Iasi, Romania) in the group of [Prof. Maria Gavrilescu](#), and in 2004 for 9 months at [Queen's University Marine Laboratory](#), Portaferry, Northern Ireland, UK - in the group of [Prof. Mathew J. Dring](#).

- Technologies and biotechnologies of wastewater and contaminated soils treatment (e.g., recuperative bioremediation of metals from wastewater using algal and fungal biomass);
- Modelling and simulation of bio-geo-chemical processes;
- Designing pre-treatment plants.

04/12/2017

