



Network of reference laboratories and related organisations for
monitoring and bio-monitoring of emerging environmental pollutants

NORMAN DATABASES

Jaroslav Slobodnik
Environmental Institute, Kos, Slovak Republic

Launch meeting of the new permanent network and project
final workshop , Paris, 20 October 2008



EMPOMAP: Database of European leading experts, organisations and projects

- **Publicly available since February 2007**
- **Improved user-friendliness**
- **Users invited to register their projects/ organisations/ expertise**
 - No. of registered users - >245 (ca. 140 organizations)
 - Experts – 55 (+8 in draft)
 - Organizations – 24 (+5 in draft)
 - Projects – 100 (+5 in draft)

Norman - Windows Internet Explorer

http://www.ei.sk/horman/emponap/expert_show.php

Norman

Fraud monitoring is on

Options

norman Network of reference laboratories for monitoring of emerging environmental pollutants

SEK Network Programme

NORMAN NORMAN DATABASES

EMPOMAP

Search the database
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You are logged in as **Marcela Fabianova** (Username: Fabianova)

Emerging Substances - EXPERTS

55 match(es) found to your query

Family name	First name	Mr./Ms.	Country	Organisation	E-mail
<input type="checkbox"/>	Alt-Aissa	Selim	Mr. France	INERIS	selim.alt-aissa@ineris.fr
<input type="checkbox"/>	Alpendurada	Maria de Fátima	Ms. Portugal	Water Institute of Northern Region	mfalpendurada@iaren.pt
<input type="checkbox"/>	Borchers	Ulrich	Mr. Germany	IWW Water Centre	u.borchers@iww-online.de
<input type="checkbox"/>	Boxall	Alistair			
<input type="checkbox"/>	Brown	Richard			
<input type="checkbox"/>	Carlos	Gonçalves			
<input type="checkbox"/>	Coquery	Marina			
<input type="checkbox"/>	Cunha	Editte			
<input type="checkbox"/>	Farré	Marinella			
<input type="checkbox"/>	Gans	Oliver			
<input type="checkbox"/>	Garric	Jeanne			
<input type="checkbox"/>	Gerzabek	Martin			
<input type="checkbox"/>	Giger	Walter			
<input type="checkbox"/>	Goksoyr	Anders			
<input type="checkbox"/>	Gravell	Anthony			
<input type="checkbox"/>	Grover	Darren			
<input type="checkbox"/>	Guimarães	Ana			
<input type="checkbox"/>	Hanke	Georg			
<input type="checkbox"/>	Heath	Ester			
<input type="checkbox"/>	Hofmann	Thilo			
<input type="checkbox"/>	Hollender	Juliane			
<input type="checkbox"/>	Jeronimo	Paula			

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http://www.ei.sk/horman/emponap/expert_detail.php?id=2

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Emerging Substances - EXPERTS

GENERAL COORDINATES - EXPERT

Family name: First name: Mr./Ms.: Title (Prof., Dr., ...):
Slobodnik Jaroslav Mr. Dr.

Organisation (full name in English):
Environmental Institute

Current position / job title: Department / group:
Director

ADDRESSES

Street name and number: Town / City:
Okružna 784/42 Koš

Post code: Country:
97241 Slovak Republic

Telephone: **+421-46-5420719**

Fax: **+421-46-5430917**

E-mail: **slobodnik@ei.sk**

Website: **www.ei.sk**

PERSONAL EXPERTISE

Primary field of work: **Emerging substances in aquatic environment (water, suspended matters, sediments)**

Additional fields of work: **Database development, Development/validation of analytical methods, Emerging substances in aquatic environment (water, suspended matters, sediments), Emerging substances in water, Identification of emerging substances by mass spectrometry techniques, Monitoring of emerging substances, Quality assurance/quality control, Quality standards/guideline water, Identification of emerging substances**

Details of your professional expertise:

Environmental management and consultancy. Extensive experience in international/national-scale programmes on monitoring and evaluation of pollution of river basins and drinking water sources, monitoring of river basins, assessment of pollution of water bodies, development of river basin monitoring programmes according to WFD principles, design and implementation of environmental information and data management systems. Environmental analytical chemistry - development and implementation of novel techniques and methodologies for identification/determination and monitoring of EU Water Framework Directive pollutants, endocrine disrupting compounds, synthetic estrogens, pesticides, pharmaceuticals and industrial pollutants. Turn-key establishments of environmental laboratories and implementation of the quality control system.

List of five of your most relevant projects during last 10 years:

Project title:	From:	To:	Coordination
1. NORMAN - Network of reference laboratories and related organisations for monitoring and bio-monitoring of emerging environmental pollutants, European Union 6th Framework Programme Project No. 018486	2005	2008	Participant
2. EAQC-WISE - European Analytical Quality Control in Support of the Water Framework Directive via the Water Information System for Europe, European Commission, EU 6FP project No. 022603; STREP	2005	2005	Participant
3. AQUATERRA - Global change and Ecosystems: Integrated Project, European Union 6th Framework Programme Project No. FP6-2002-Global1 505428	2003	2008	Participant
4. WEKNOW - Web-based European Knowledge Network on Water, EU 5th Framework Programme project No. EVK1-2002-20004	2002	2005	Participant
5. AWACSS - Automated Water Analyser Computer Supported System, EU 5th Framework Programme Project No. EVK1-2000-00515	2001	2004	Participant

List of your key publications/papers/reports dealing with emerging substances:

EMPODAT: Database of occurrence/monitoring data on emerging substances

- Web-database on-line
- Three modules:
 - **Chemical data** including sub-module on **nanoparticles**
 - **Bioassays - monitoring data**
 - **Bioassays - ecotoxicity studies**
- **Data entry**
 - **Data Collection Templates** for bulk data upload - **downloadable**
 - **On-line entry form** for single entries
 - Matrices: **water, sediment, SPM, biota, air**

- EMPOMAP
- EMPODAT**
- Search the database
- Add new entry or Edit the database
- Download Data Collection Templates
- EMPOMASS
- Contact
- Your Profile
- Logout
- FAQ
- Statistics

To submit a bulk data a set of specific templates has been prepared. For each ecosystem/matrix two templates are available – for individual and for aggregate data template contains several worksheets:

- i. Instructions – with basic explanation of each item in worksheets;
- ii. Data source – where information about the data provider, laboratory and references should be inserted;
- iii. Analysis – to enter information on sampling station, measured values and other relevant metadata;
- iv. Analytical method – to enter information about analytical methods used for each determinand.

According to the ecosystem/matrix and type of data (individual/aggregate) an appropriate template should be filled in and sent to the following e-mail address: proj@slobodnik@ei.sk with copy to slobodnik@ei.sk, for further processing and upload to the web-database. It is particularly important to fill in all obligatory fields in order to facilitate proper work of the Search function in the database.

Please download the templates relevant for your data:

Ecosystem/matrix	Individual data	Aggregate data	Bioassays data
Water (surface, ground, wastewater)	DCT_WATER-ind-20081004-v9.xls DCT_WATER-ind-20081004-v9.zip	DCT_WATER-aggr-20081004-v9.xls DCT_WATER-aggr-20081004-v9.zip	DCT_BIOASSAYS_Water_20080425_PHE.xls DCT_BIOASSAYS_Water_20080425_PHE.zip DCT_BIOASSAYS_Ecotoxicity_Studies_20080425_PHE.xls DCT_BIOASSAYS_Ecotoxicity_Studies_20080425_PHE.zip
Sediments	DCT_SEDIMENTS-ind-20081004-v9.xls DCT_SEDIMENTS-ind-20081004-v9.zip	DCT_SEDIMENTS-aggr_20081004-v9.xls DCT_SEDIMENTS-aggr_20081004-v9.zip	DCT_BIOASSAYS_Sediments_20080425_PHE.xls DCT_BIOASSAYS_Sediments_20080425_PHE.zip
Biota	DCT_BIOTA-ind-20081004-v9.xls DCT_BIOTA-ind-20081004-v9.zip	DCT_BIOTA-aggr-20081004-v9.xls DCT_BIOTA-aggr-20081004-v9.zip	
SPM	DCT_SPM-ind-20081004-v9.xls DCT_SPM-ind-20081004-v9.zip	DCT_SPM-aggr_20081004-v9.xls DCT_SPM-aggr_20081004-v9.zip	
Air	DCT_AIR-ind_20081004-v8.xls DCT_AIR-ind_20081004-v8.zip	DCT_AIR-aggr-20081004-v9.xls DCT_AIR-aggr-20081004-v9.zip	

Web counter: 1 2 9 0

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Address http://www.ei.sk/norman_new/empodat/edit.php

Go Links >>



Network of reference laboratories for monitoring of emerging environmental pollutants



You are logged in as **admin admin** (Username: **admin**)

Add new entry or Edit the database


Select

- Chemical data
- Bioassays - monitoring data
- Bioassays - ecotoxicity studies

- NORMAN**
- NORMAN DATABASES**
- EMPOMAP**
- EMPODAT**
 - Search the database
 - Add new entry or Edit the database
 - Download template for uploading bulk data
- EMPOMASS**
- Contact**
- Your Profile**
- Logout**
- Admin section**
 - All users
 - All users (Excel)
 - Empomap (Excel)
 - Logs (Excel)
- FAQ**
- Statistics**



Windows Internet Explorer

 The selected data can be used for publication or whatever other reporting purpose only with citing their source. Publication of these data without proper reference in any publicly available journals/literature will be considered as a violation of the internal rules of the NORMAN network and consequently reported to the editors of the journals/publications in question.

OK





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You are logged in as Jaroslav Slobodnik (Username: js)

Search

4349 match(es) found to your query

	Determinand/measurand	Concentration	Ecosystem matrices	Sampling site/station	Sampling date
1826	Dibutyl tin ion	3.000 µg/l	Biota - River water	River Saar, barrage Rehlingen	28.07.1997
1858	Dibutyl tin ion	Less than 3 µg/l	Biota - Lake water	Lake Belau	11.09.1997
1785	Dibutyl tin ion	3.000 µg/l	Biota - River water	River Saar, barrage Guedingen	06.08.1996
1572	Dibutyl tin ion	Less than 3 µg/l	Biota - River water	River Elbe, near Prossen	25.08.1999
1636	Dibutyl tin ion	4.000 µg/l	Biota - River water	River Elbe, near Barby	18.08.1999
1700	Dibutyl tin ion	23.000 µg/l	Biota - River water	River Elbe, near Blankenese	14.09.1999
1764	Dibutyl tin ion	Less than 3 µg/l	Biota - River water	River Mulde, near Dessau	01.08.2003
1827	Dibutyl tin ion	Less than 3 µg/l	Biota - River water	River Saar, barrage Rehlingen	20.07.1998
1859	Dibutyl tin ion	Less than 3 µg/l	Biota - Lake water	Lake Belau	16.09.1999
1786	Dibutyl tin ion	3.000 µg/l	Biota - River water	River Saar, barrage Guedingen	27.07.1997
1573	Dibutyl tin ion	Less than 3 µg/l	Biota - River water	River Elbe, near Prossen	11.08.2000





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Add new entry or edit
the database

Download template for
uploading bulk data

EMPOMASS
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Search

4349 match(es) found to your query

	Determinand/measurand	
1826	Dibutyl tin ion	3.0
1858	Dibutyl tin ion	Le
1785	Dibutyl tin ion	3.0
1572	Dibutyl tin ion	Le
1636	Dibutyl tin ion	4.0
1700	Dibutyl tin ion	23
1764	Dibutyl tin ion	Le
1827	Dibutyl tin ion	Le
1859	Dibutyl tin ion	Le
1786	Dibutyl tin ion	3.0
1573	Dibutyl tin ion	Le

QA/QC information about chemical data

Limit of Detection (LoD):	1 µg/kg
Limit of Quantification (LoQ):	3 µg/kg
Uncertainty at LoQ:	15 %
Sample preparation method:	TMAH digestion, n-hexane extraction, derivatisation (alkylation with ethylborate or Grignard)
Analytical method/Detection:	GC-AED (atomic emission detection)
Has used method been validated according to NORMAN protocols?	No
Have the results been corrected for extraction recovery?	No
Was a field blank checked?	Not applicable
Is laboratory accredited according to ISO 17025?	Yes
Is the laboratory accredited for given determinand?	Yes
Does laboratory participate in interlaboratory studies for the given determinand?	Yes
Summary of performance of the laboratory in the interlaboratory study for the given determinand:	z-score (according to ISO-13528) ≤ 3
Are control charts recorded for the given determinand?	Not applicable
Are the data controlled by a competent authority?	Yes





International Office for Water
Capacity building for better water management

INERIS

Implementation of Requirements for Priority Substances within the Context of the Water Framework Directive



Common template for data collection
Final version 20th March 2007

Contact persons:

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E-mail b.fribourg-blanc@oieau.fr

Your Profile

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Sampling site/station:

Ecosystems/matrices:

Bioassay:

MEASUREMENT RESULT

Value:

Unit:

Precision:

Sampling date/time:

DATA SOURCE (to be cited when the

Data source:

Organisation (name, city, country):

E-mail:

Laboratory (name, city, country):

Laboratory ID:
(unique national code or ISO 3166-alpha-2 code elements)

ETRS89 Longitude: ° ' ''
Latitude: ° ' ''

WGS84 Longitude:
Latitude:

Precision of coordinates:

Precise (range 1-10m)

Altitude [m]:

-
-
- Activated sludge
- Anabaena flos-aquae
- Artemia salina
- Artemia salina (Artoxkit M)
- Bacterial mutation (Ames)
- Bacterial mutation (SOS chromotest)
- Bacterial mutation (umuC)
- Brachionus plicatilis (RotoxkitM)
- Brachionus plicatilis
- Brachydanio rerio
- Brachydanio rerio (ELS)
- Ceriodaphnia dubia
- Cucumber
- Cyprinodon variegatus
- Daphnia magna
- Daphnia pulex
- Daphnia spp.
- Eisenia foetida
- Hyalella azteca
- In vitro cytogenics (chromosom. Aberr.)
- Lemna gibba
- Lemna minor
- Lepomis macrochirus
- Lepomis macrochirus BF-2 cells
- Leuciscus idus
- Microcystis aeruginosa
- Mysidopsis bahia
- Navicula pelliculosa
- Onchorhynchus mykiss

Hour 00 Min 00



EMPODAT

Organization – data provider	matrix	data entries uploaded
EI / SHMI (Slovakia)	Surface w. / waste w./ sediments	5067
JRC (Italy)	Surface water	744
IJS (Slovenia)	Surface water	86
UBA (Germany)	Surface w. - marine	180
CSIC (Spain)	Surface w. / sediments	880
FI- IME / German Env. Speciment Bank (Germany)	Biota	1185
ICPDR (Danube Basin)	Surface water	560
TOTAL		8702

EMPODAT

Country	No of data entries	Country	No of data
Austria	44	Bulgaria	63
Croatia	32	Germany	1258
Hungary	73	Italy	744
Romania	178	Serbia	85
Slovenia	86	Slovakia	5132
Spain	880	Intl. waters	125

EMPODAT

Organization – data provider	Matrix	Data in pipeline
UK EA (UK)	Surface w. / ground w. / sediments	734
BRGM (France)	Surface w. /ground w.	648
SYKE (Finland)	Biota / sediments / surface w.	4730
IRSA (Italy)	Surface water / SPM	230
IVL (Sweden)	Sediments	650
UBA (Germany)	Biota	84
WRI (AQUATERRA Danube Survey)	Sediments - bioassays	817
TOTAL		7893

EMPODAT – Data scoring

NEW!!!

Norman - Windows Internet Explorer

http://www.ei.sk/norman/empodat/search.php

Norton Phishing Protection on Identity Safe Log-ins

QA/QC information about chemical data

Limit of Detection (LoD): <

Limit of Quantification (LoQ): <

Analytical method/Detection: HPLC-MS or MS/MS GC-MS or MS/MS HPLC-UV

Analytical method/Detection: (other) GC-AED (atomic emission detection)

Show only data in the following category (Instructions):

Search Reset

- Adequately supported by quality-related information
- Supported by limited quality-related information
- Minimal quality-related information
- Not supported by quality-related information

Done Internet | Protected Mode: On 200%

No.	Metadata	Information provided	Rating	Minimum requirements - category 3	Minimum requirements - category 2	Minimum requirements - category 1
1	Limit of Detection (LoD)	Filled in	10	10	10	10
		Not filled in	0			
2	Limit of Quantification (LoQ)	Filled in	8		8	8
		Not filled in	0			
3	Uncertainty at LoQ	Filled in	6		6	6
		Not filled in	0			
4	Coverage factor	Filled in	2			2
		Not filled in	0			
5	Analytical method	Filled in	2		2	2
		Not filled in	0			
6	Sample preparation method	Filled in	2		2	2
		Not filled in	0			
7	Has standardised analytical method been used?	Filled in	6			
		Not filled in	0			
8	Has the used method been validated according to one of the NORMAN protocols?	V1 – within laboratory	6	6		
		V2 – between laboratories	8		8	
		V3 - routine	10			10
		No	0			
		Not known	0			



Code	Category	Score
1	Adequately supported by quality-related information	68-92
2	Supported by limited quality-related information	52-67
3	Minimal quality-related information	22-51
4	Not supported by quality-related information	0-21

EMPOMASS: Mass spectral database of unknown and provisionally identified substances

- Web-database on-line
- **Two modules**
 - GC-MS
 - LC-MS-MS
 - including option of **accurate mass measurement**
- Data entry
 - **Data Collection Templates** for bulk data upload - **downloadable**
 - **On-line entry form** for single entries
 - Matrices: **water, sediment, SPM, biota, air**



UPLOADING BULK DATA

To submit a bulk data a set of specific templates has been prepared. For each ecosystem/matrix template is available, containing several worksheets:

- Instructions – with basic explanation of each item in worksheets;
- Data source – where information about sampling point, data provider, laboratory and references should be inserted;
- GC-MS data – to enter information on sampling station, measured values and other relevant metadata;
- Analytical method – to enter information about analytical methods used for each substance.

According to the ecosystem/matrix an appropriate template should be filled in and sent to the following e-mail address: projects@ei.sk with copy to slobodnik@ei.sk, for further processing and upload to the web-database. Please note, that mass spectrum charts (*.jpg, *.gif or similar format) and raw chromatograms (*.ms or similar format) should be submitted together with the completed data collection template. It is particularly important to fill in all obligatory fields in order to facilitate proper work of the Search function in the database.

Please download the templates relevant for your data:

Ecosystem/matrix	GC-MS data
Water (surface, ground, wastewater)	DCT_GC-MS_Water_20080922-v1.xls DCT_GC-MS_Water_20080922-v1.zip
Sediments	DCT_GC-MS_Sediments_20080922-v1.xls DCT_GC-MS_Sediments_20080922-v1.zip
Biota	DCT_GC-MS_Biota_20080922-v1.xls DCT_GC-MS_Biota_20080922-v1.zip
SPM	DCT_GC-MS-SPM_20080922-v1.xls DCT_GC-MS-SPM_20080922-v1.zip

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Search the database

Add new entry or Edit
the database

Download Data Collection
Templates

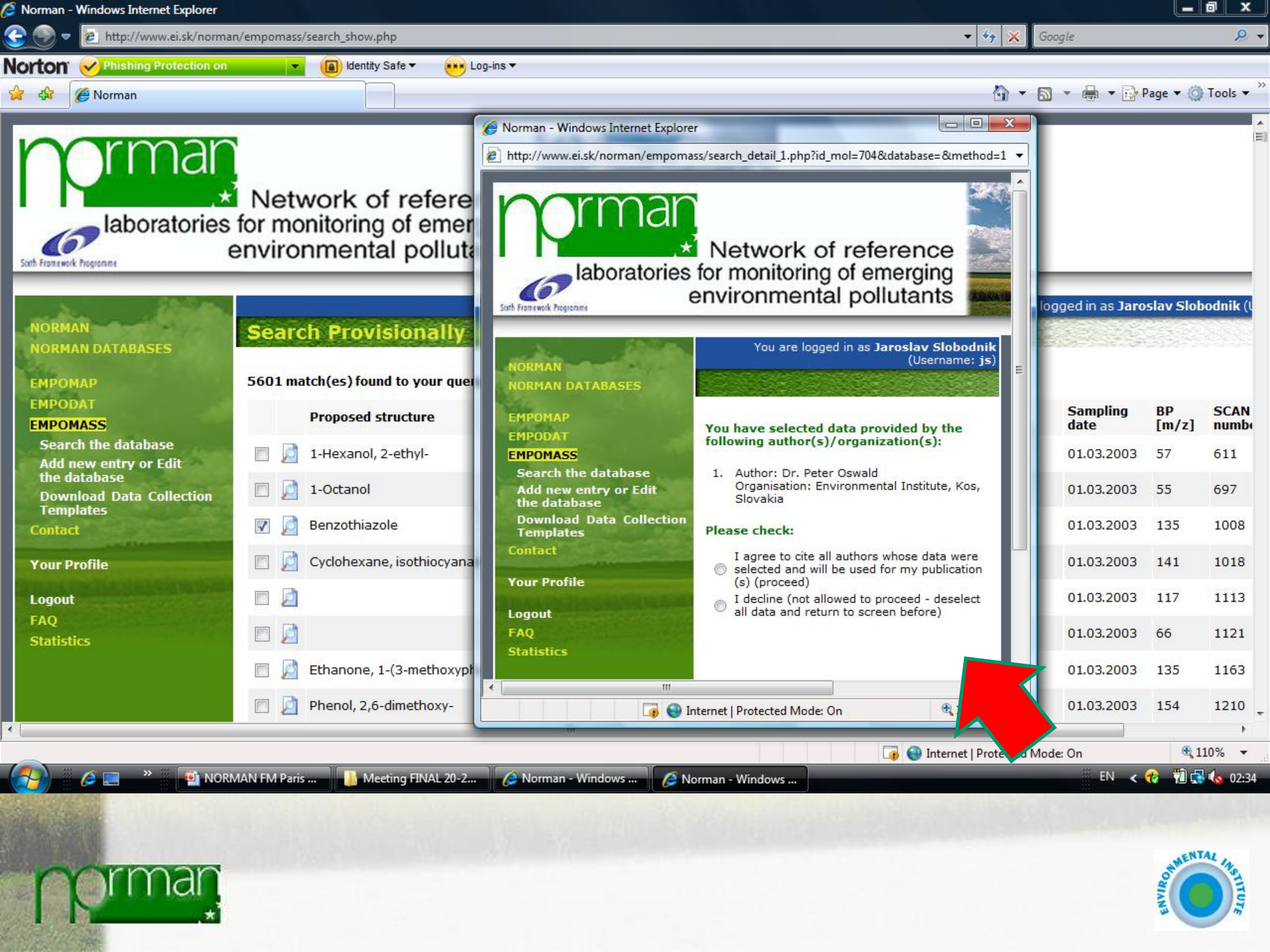
Contact

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Statistics

Web counter: 1 2 8 9

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Network of reference laboratories for monitoring of emerging environmental pollutants

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Search Provisionally

5601 match(es) found to your query

Proposed structure

- 1-Hexanol, 2-ethyl-
- 1-Octanol
- Benzothiazole
- Cyclohexane, isothiocyana
- Ethanone, 1-(3-methoxyph
- Phenol, 2,6-dimethoxy-

Network of reference laboratories for monitoring of emerging environmental pollutants

Sixth Framework Programme

EMPOMASS

Search the database
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You are logged in as **Jaroslav Slobodnik**
(Username: js)

You have selected data provided by the following author(s)/organization(s):

- 1. Author: Dr. Peter Oswald
Organisation: Environmental Institute, Kos, Slovakia

Please check:

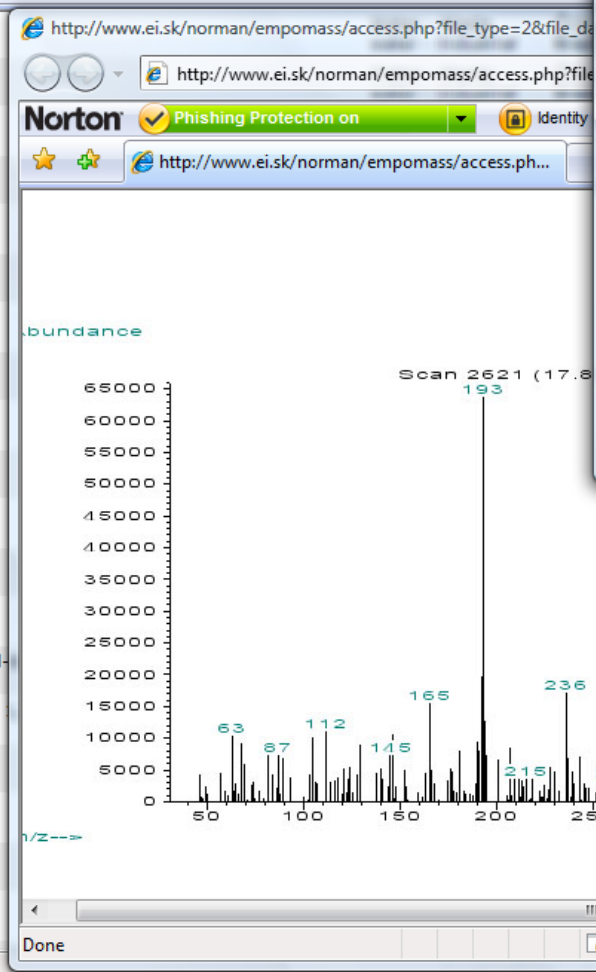
- I agree to cite all authors whose data were selected and will be used for my publication (s) (proceed)
- I decline (not allowed to proceed - deselect all data and return to screen before)

logged in as Jaroslav Slobodnik (js)

Sampling date	BP [m/z]	SCAN number
01.03.2003	57	611
01.03.2003	55	697
01.03.2003	135	1008
01.03.2003	141	1018
01.03.2003	117	1113
01.03.2003	66	1121
01.03.2003	135	1163
01.03.2003	154	1210



- Butyl-2-methylpropyl phthalate
- Dibutyl phthalate
- Iminostilbene
- some chlorinated compound
- Bisfenol A
- Diclofenac
- Carbamazepine
- Pentoxifylline
- 4,5,6,7-tetrahydro-1,4-dimethylpyrimidin
- 1-Phenanthrenecarboxylic acid, dimethyl-7-(1-methylethyl)-
- DEHP



Compound:	Propazine
Concentration:	2
Unit:	ug/L
Addition of IS:	2
Sample preparation method / technique	
Listed:	4
Used solvent/sorbent:	PLRP-S/ACN
Instrument type and manufacturer:	GC-MS, Agilent
Detector type:	1
Scan range [amu]:	From: 45 To: 450
Scan frequency [scan/s]:	1.86
Injector:	3
	100°C (0.7



EMPOMASS

Organization – data provider	Matrix	Data entries uploaded
EI / SHMI (Slovakia)	Surface w. / waste w./ sediments	5600
ITM (Sweden)	??	??
Deltares (The Netherlands)	??	??
MODELKEY	??	??
TOTAL		5600

Future steps

- Data collection and processing
- **Evaluation of the data from Norman databases**
 - Target substance(s): benchmark values, location, quality of the data, data gaps, etc.
 - **2009 - organic phosphorous flame retardants and siloxanes**
- Re-programming of all databases in AJAX software
 - Speed and flexibility of „SEARCH“ function
- Interlinking of all three databases
 - Automated procedure for registering organisations-projects-experts when working in EMPODAT or EMPOMASS

Upgrade of the list of NORMAN substances I

- Present list O.K. but:
 - Duplication of entries
 - Wrong/missing CAS#
 - Some classes without substances
 - Under-represented drinking water sector
- Addition of some compounds even if already regulated (e.g., TBT, atrazine – flagged)
- Degradation products and parent compounds flagged
- Possible structure (each compound one line only):

– **Class/category I // Class/category II // Sub-class I // Sub-class II // Individual substance // CAS# // Systematic name (IUPAC) // Synonym or regulatory name**

Upgrade of the list of NORMAN substances II

- **Criteria to be developed by Working Group on Prioritisation**
- **Considerations to include:**
 - All **OTHER POLLUTANTS** from each MS
 - **Annex III** substances subject to review for possible identification as priority substances or priority hazardous substances - *DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on environmental quality standards in the field of water policy*

Permanent NORMAN Network

- All databases - free access for public
- EMPOMAP – no restrictions
- EMPODAT and EMPOMASS – restrictions in access of some features for non-members
- NORMAN Network (paying) members – considerations
 - Full access with the data export to Excel
 - Features on data quality/availability/reliability
 - Regular analysis of data in the databases – reports available only to members before publication
 - Graphical presentation of the data (GIS??)
 - ???

Other considerations

- Continue lobbying at DG ENV and DG RESEARCH to make an upload of all data on emerging substances generated within future EU-funded (e.g., FP) projects mandatory
- Harmonise efforts with:
 - Reporting/upgrade of DWD
 - REACH
 - EEA - WISE

Acknowledgements

- **ALL NORMAN partners and Contact Points**
- Marcela Fabianova
- Ivan Spanik
- Eszter Palfalvine-Hajdu
- Lubos Cirka