

# CV of Pavel Izák, Ph.D., DSc



## **Personal Information:**

**Nationality:** Czech  
**Date and place of birth:** 25.11.1971, Prague, Czech Republic  
**Researcher ID:** H-3401-2014

## **Education:**

2014 DSc in Chemical Science, Czech Academy of Science  
2002 Ph.D. in Physical Chemistry, Institute of Chemical Technology in Prague  
1996 M.Sc. in Physical and Analytical Chemistry, Institute of Chemical Technology in Prague

## **Career Development and International Experiences:**

2015-present Head of E. Hala Laboratory of Separation Processes, Institute of Chemical Process Fundamentals of the Czech Academy of Sciences  
2007-present Senior researcher, Institute of Chemical Process Fundamentals of the Czech Academy of Sciences  
2005-2007 Marie Curie Intra-European Fellow, University of Rostock, Germany; 24 months  
2002-2004 Post Doctoral Fellow, New University of Lisbon, Portugal; 27 months  
1998-2000 Post Graduate Fellow, Pacific Northwest National Laboratory, USA; 24 months  
1998 Research Assistant, University of Newcastle, Great Britain; 2 months  
1997 Research Assistant, Technion University, Haifa, Israel; 2 months  
1996 Research Assistant, The research centre at the steel factory, Finland; 3 months  
1994 Research Assistant, University of Heidelberg, Germany; 7 months

## **Present Research Interests:**

Pervaporation, Gas and Vapour Permeation, Nanofiltration, Liquid Membranes, Ionic Liquids, Separation of Enantiomers

**Present position:** Institute of Chemical Process Fundamentals, Academy of Sciences of the Czech Republic  
**More details about group under my supervision:** <http://www.icpf.cas.cz/Membrane-Group/>

## **Awards:**

2014 Winner of E.ON Global Energy Award, category: Company.  
2014 Price of Kapsch, Invention – Technical Science – Czech Head 2014  
2013 Award of ERSTE Corporate banking  
2013 Award of Ministry of the Environment of the Czech Republic  
2007-2011 Reintegration Fellow, Czech Academy of Science  
2005 Selected abstract in Research Trends, An International Newsletter, Membrane Technology, September 2005, p. 11.  
2000 Outstanding Performance Award, US Pacific Northwest National Laboratory

## **Others:**

2013-present Member of the evaluation panel of Czech Science Foundation  
2011-2013 Elected Vice-president of the European Membrane Society Board  
2005 Member of Honor Roll of Referees from Journal of Membrane Science

## **Teaching experience:**

2010-2011 Course of Membrane Processes, Institute of Chemical Process Fundamentals, Academy of Sciences of the Czech Republic – postgraduate students  
2005-2006 Course of Membrane Processes, University of Rostock, Germany – graduate students  
2000-2001 Course of Physical Chemistry, Institute of Chemical Technology in Prague – undergraduate students  
1996-1998 Practical laboratories from Physical Chemistry, Institute of Chemical Technology in Prague – undergraduate students

**Web of Science®: H-index = 18, the total number of publications and the total number of citations (without self-citations): over 60 scientific articles, 9 chapters in professional books, 3 patents and 111 contributions to scientific conferences, 788 citations and 638 citations without self-citations.**

**Pedagogical activities:**

During years 2008 up to now I personally supervised 5 PhD students.

**Chapter in book:**

1. Izák P., Hrma P., Schweiger M.J.: Kinetics of Conversion of High-Level Waste to Glass. In: Nuclear Site Remediation. (Gary, E.P. - Heineman, W.R., Ed.), pp. 314-328, American Chemical Society, 2000.
2. Schafer T., Branco L.C., Fortunato R., Izák P., Rodrigues C.M., Afonso C.A.M., Crespo J.G.: Chapter 8: Opportunities for Membrane Separation Processes Using Ionic Liquids. In: Ionic Liquids IIIB: Fundamentals, Progress, Challenges, and Opportunities: Transformation and Processes. (Rogers, R.D. - Seddon, K.R., Ed.), pp. 97-110, American Chemical Society, New York 2005.
3. Izák P., Friess K., Šípek M.: Chapter 12: Pervaporation and Permeation Taking Advantage of Ionic Liquids. In: Handbook of Membrane Research: Properties, Performance and Applications. (Gorley, S.V., Ed.), pp. 387-402, Nova Science Publishers, New York 2010.
4. P. Izák, M. Kárászová: Kapitola 7: Pervaporace, Membrane processes. (Palatý, Z., Ed.), pp. 219-236, UCT Praha, Praha 2012.
5. Friess K., Izák P., Šípek M., Jansen J.C.: Chapter 4: Transport of VOCs in Polymers. In: Volatile Organic Compounds. (Hanks, J.C. - Louglin S.O., Ed.), pp. 119-147, Nova Science Publishers, New York 2011.
6. Karaszova M., Friess K., Šípek M., Jansen J.C., Izak P.: Chapter 3: Biogas Upgrading for the 21st Century. (Litonjua, R. - Cvetkovski, I., Ed.), Nova Science Publishers, New York 2012.
7. Bobák M., Dolejš P., Izák P., Sedláková Z.: Kapitola 5: Průmyslové aplikace dělení plynů a par. Chapter 5: Industry Application of Separation Gas and Vapours. In: Membránové dělení plynů a par. (Šípek, M., Ed.), pp. 103-131, UCT, Praha 2014.
8. Izák P., Žák M.: Kapitola 7: Pervaporation. Chapter 7: Pervaporation. In: Membránové dělení plynů a par. (Šípek, M., Ed.), pp. 153-160, Vydavatelství VŠCHT, Praha 2014.
9. Kárászová M., Izák P.: Kapitola 6: Bioplyn. Chapter 6: Biogas. In: Membránové dělení plynů a par. (Šípek, M., Ed.), pp. 133-152, Vydavatelství VŠCHT, Praha 2014.

**Funded projects and ongoing application:**

Name of the project	Responsible, grant holder	Grant funding agency	Time period
Pervaporation and Ionic Liquids	Izák/Crespo	PT/9470/2002	10/2002-1/2005
Liquid Membranes and Ionic Liquids for Selective Downstream Processing	Izák/Kragl	EU/010927	2/2005-2/2007
Pervaporation and Nanofiltration with Ionic Liquids	Izák/Šolcová	RTGR/44737	2/2007-2/2008
Ionic Liquid membranes for Separation of Liquid Mixtures by Pervaporation	Izák/Hovorka	Czech Science Foundation	1/2008-12/2011
The Methane Enrichment of Biogas	Izák	Ministry of Industry and Trade CZ	5/2009-11/2010
Separation of Volatile Organic Compounds from Air	Izák/Friess	Czech Science Foundation	1/2010-12/2013
Advanced concepts and process schemes for CO <sub>2</sub> free fluidized and entrained bed co-gasification of coals	Svoboda/Izák	EC fund for coal and steel	7/2010-6/2013
Membrane separation - the more effective separation of a pure enantiomer from a racemic mixture	Izák/Hovorka/Brožová	Czech Science Foundation	1/2012-12/2015
Separation of polar and non-polar gases	Izák	Czech Science Foundation	1/2014-12/2016
Supported ionic liquids membranes for selective separation of volatile organic vapors and pollutants from the waste gases	Izák	The Ministry of Education, Youth and Sports of CZ	4/2014-4/2017
Enrichment of raw biogas by methane	Friess/Izák	The Ministry of Education, Youth and Sports of CZ	4/2014-12/2016

### **Granted patent**

1. P. Izák, U. Kragl, M. Köckerling: "Multiphase membrane"; University of Rostock, Germany, 2006. DE 10 2006 024 397 B3, ***sold to MERCK 2008.***
2. P. Izák, M. Poloncarzová, J. Vejrazka; Czech head, Czech Republic. "Způsob obohacení bioplynu z čističek odpadních vod nebo zemědělské prvovýroby o methan a zařízení k jeho obohacení" CZ303106.
3. P. Izák, M. Poloncarzová, J. Vejrazka; Czech head, Czech Republic. "Způsob separace plynů a zařízení k jeho obohacení" CZ303107.
4. P. Izák, M. Poloncarzová, J. Vejrazka; Institute of Chemical Process Fundamentals, Czech Republic. "The method and the apparatus for methane enrichment of biogas from sewage plant and agriculture" EP2576010-A2

### **Pending patents**

1. P. Izák, M. Poloncarzová, J. Vejrazka; Institute of Chemical Process Fundamentals, Czech Republic. "The method and apparatus for gas mixture separation" PCT-438 2011

### **Invited presentations to internationally established conferences:**

1. P. Izák: Separation of Fluids by Membranes Processes. EPFL VALAIS WALLIS, (25.8.2016) Sion, Switzerland
2. P. Izák: Purification of Mixture of Gasses. Catholic University of Leuven, (22.2.2016) Leuven, Belgium
3. P. Izák: Separation of liquids and Gasses by Non-porous membranes. Swiss Federal Institute, (11.6.2015) Lausanne, Switzerland
4. P. Izák: Separation of Fluids by Membrane Processes. 40th International Conference of Slovak Society of Chemical Engineering, Proceedings, (28.5.2013), Tatranské Matliare, Slovakia
5. P. Izák: Practical Application of Pervaporation and Gas Permeation, University of Pannonia, Research Institute of Chemical and Process Engineering, (17.11.2010), Veszprém, Hungary
6. P. Izák, K. Friess, U. Kragl: Fermentation Coupled with Pervaporation for Increasing the Product Recovery, University of Calabria, (21.4.- 26.4.2008), Cosenza, Italy
7. P. Izák, J. G. Crespo, U. Kragl: Pervaporation in combination with ionic liquids, Ben-Gurion University of the Negev, (17.9.- 22.9.2006), Beersheba, Israel
8. P. Izák, J. G. Crespo, U. Kragl: A new trend in membrane separation processes in combination with ionic liquids, University of Zagreb, 6th Meeting of Junior Chemical Engineers, (23.2-24.2 2006), Zagreb, Croatia
9. P. Izák: Pervaporation and Biotransformation, New University of Lisbon, (12.9.2005), Lisbon, Portugal
10. P. Izák: New trends in membrane separation processes, (4.5.2004), University of Rostock, An international PhD program on "New materials". Germany

