



## Europass Curriculum Vitae

### Personal information

Surname(s) / First name(s) **Guczi/László**  
 Address(es) **6, Rebarbara u., Érd, 2030, Hungary**  
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 E-mail **guczi@sunserv.kfki.hu**  
 Nationality **Hungarian**  
 Date of birth **23-03-1932**  
 Gender **male**

### Work experience

Dates **1961-present**  
 Occupation or position held **Professor, science senior consultant**  
 Main activities and responsibilities **Leading research in the field of heterogeneous catalysis**  
 Name and address of employer **Institute of Isotopes, 29/33 Konkoly Th. M. út, P. O. Box 77, H-1525 Budapest, Hungary**  
 Type of business or sector **Scientific research**

### Education and training

Title of qualification awarded **University of Szeged, BSc chemistry (1955), Ph.D. chemistry (1959), PhD at the Hungarian Academy (1967), DSc (1976), Professor of Chemistry at Szeged University(1976), Professor at Technical University of Budapest (1996)**  
 Name and type of organisation providing education and training **Doctor of Sciences**  
**Szeged University, Hungarian Academy of Sciences, Sheffield University, Worcester Polytechnic Institute, University of California Berkeley.**

### Personal skills and competences

Mother tongue(s) **Hungarian**

Other language(s)

Self-assessment

*European level (\*)*

**Language English**

Understanding		Speaking		Writing	
Listening	Reading	Spoken interaction	Spoken production		
excellent	excellent	excellent	excellent		

(\*) *Common European Framework of Reference for Languages*

Organisational skills and competences **During the scientific carrier group leader, department head, division head, research director**

Driving licence **yes**

### Additional information

[Videointerview \(in Hungarian\) flash, .avi](#)

László Guzzi, born March 23, 1932,

**Present Title:** Senior Scientist, Head of Laboratory of Catalysts, Chemical Research Center; Department of Catalysis, Institute of Isotopes and Professor at University of Szeged, Budapest,

**Education:** University of Szeged, BS. 1955, Kinetics, 1959, Kinetics, Academy of Sciences, PhD 1968, Sciences DSc 1976 Catalysis.

**Professional Experiences:** *Postdoctoral Fellow* 1964/65, *Visiting professor* at Worcester Polytechnic Institute,

(1975/76). Gorlaeus Laboratory, Rijks University, Leiden, The Netherlands (1980), University of Pittsburgh, Pittsburgh, USA (1989), Lawrence Berkeley Laboratory, University of California, Berkeley, USA (1990, 1997), P. & M. Curie University, Paris, France (1990), Schuit Institute of Catalysis, University of Eindhoven, The Netherlands (1994)

**Memberships and Activities:** Hungarian Catalysis Club, *Secretary*, 1970/80; Hungarian Petrochemical Society, *Secretary and Chairman* 1972/83, Hungarian Chemical Society, 1960, Symposium on the Mechanisms of Hydrocarbon, Reaction, Siofok 1973, *Chairman of the Organizing Committee* 1972/73, American Chemical Society, 1976, Division Petroleum Chemistry, NSF-Hungarian Academy Project, *Principal Investigator* 1975/83, 1989/91, USA-Hungarian Project, 1992/94, International Union of Pure and Applied Chemistry (IUPAC), *National Representative* in Chemical Kinetics 1987; International Union for Vacuum Science, Technique and Application (IUVSTA), *National Representative* 1988,

**Editor** Applied Catalysis 1980-2006; **Editorial Board Member** Catalysis Today, 1986- Reaction Kinetics and Catalysis Letter, 1988, 10th International Congress on Catalysis, Budapest, July 19-24 1992, *Chairman of the Organizing Committee*, 1988, 8th International Symposium on Relations between Homogeneous and Heterogeneous Catalysis, Lake Balaton, September 10-14, 1995 *Chairman of the Symposium* 1992, **Awards:** Hungarian State Prize, 1983 Republic's Order, Officer Cross 1993

**Main Research Areas:** Conversions of hydrocarbons, hydrogenolysis and skeletal isomerization of saturated hydrocarbons over metal catalysts using tracer techniques (deuterium, <sup>13</sup>C- and <sup>14</sup>C-labeled molecules), selectivity control on selective hydrogenation of unsaturated hydrocarbons using bimetallic catalysts; genesis of metal or bimetallic nanoparticles using molecular nanoclusters and colloidal synthesis; interfacial chemistry in model catalysts to define the surface species at molecular level and its influence on the activity and selectivity; electron properties of nanoparticles, growth of metallic particles geometrically confined on inorganic support or in zeolite cage; role of bimetallic catalysts in deNO<sub>x</sub> in CO hydrogenation/oxidation CO hydrogenation and methane activation to form hydrocarbons; and methane activation to form hydrocarbons;

**Publications:** 412 scientific papers, 10 books and chapters and 430 lectures (34 plenary and invited).

**Some selected publications:**

- D. Horváth L.Toth and L. Guzzi, Effect of Treatment on Structure and Catalytic Activity of Gold Nanoparticles on Au/Fe<sub>2</sub>O<sub>3</sub> Catalyst Prepared by Co-Precipitation Method, *Catal. Lett.*, **67**, 117 (2000)
- A. Horváth, A. Beck, A. Sárkány, Zs. Koppány, A. Szűcs, I. Dékány, Z. E. Horváth and L. Guzzi, Effect of Different Treatments on Aerosil silica-supported Pd nanoparticles produced by "Controlled Colloidal Synthesis". *Solid State Ionics*, **141-142**, 147 (2001)
- D. Horváth, M. Polisset-Thfoin, J. Fraissard and L. Guzzi, Novel Preparation Method and Characterization of Au-Fe/HY Zeolite Containing Highly Stable Gold Nanoparticles Inside Zeolite Supercages, *Solid State Ionics*, **141-142**, 153 (2001)
- G. Pető, G. L. Molnár, Z. Pászti, O. Geszti, A. Beck and L. Guzzi, Electronic structure of gold nanoparticles deposited on SiO<sub>2</sub>/Si(100), *Materials Sci. and Eng.*, **C19**, 95 (2002)
- A. M. Venezia, L. F. Liotta, G. Deganello, Z. Schay, D. Horváth and L. Guzzi, Catalytic CO Oxidation over Pumice Supported Pd-Ag Catalysts, *Appl. Catal. A*, **211**, 167 (2001)
- D. Bazin, L. Guzzi, J. Lynch, Anomalous Wide Angle X-ray Scattering (AWAXS) in Heterogeneous Catalysis, *Appl. Catal. A*, **226**, 87 (2002)
- L. Guzzi, A. Beck, A. Horváth and D. Horváth, From Molecular Clusters to Metal Nanoparticles, *Topics in Catalysis*, **19**, 157 (2002)
- Z. Pászti, G. Pető, Z. E. Horváth, O. Geszti, A. Karacs, L. Guzzi, Nanoparticle Formation Induced by Low Energy Ion Bombardment of Island Thin Films, *Appl. Phys. A*, **75**, 1-11 (2002)
- László Guzzi, Gábor Pető, Andrea Beck, Krisztina Frey, Olga Geszti, György Molnár and Csaba Daróczi, Gold Nanoparticles Deposited on SiO<sub>2</sub>/Si(100): Correlation between Size, Electron Structure and Activity in CO Oxidation *J. Am. Chem. Soc.* **125**, 4332 (2003)
- L. Guzzi, A. Beck, A. Horváth, Zs. Koppány, G. Stefler, I. Sajó, O. Geszti, D. Bazin and J. Lynch, AuPd bimetallic nanoparticles on TiO<sub>2</sub>: XRD, TEM, in situ EXAFS study and catalytic activity in CO oxidation, *J. Mol. Catal.*, **204/205**, 545 (2003)
- L. Guzzi, Z. Pászti and G. Pető, Modelling Transition Metal Nanoparticles: the Role of Size Reduction in Electronic Structure and Catalysis, Chapter 22. in "Nanotechnology in Catalysis", eds.: G.A. Somorjai, S. Hermans and B. Zhang, Kluwer Publ. Co., Amsterdam, 2003



Nanostructured Metal Surface Chemistry and of Szeged and Technical

University of Szeged PhD, Catalysis, Academy of

University of Sheffield. Worcester, MA, USA

- A. Beck, A. Horváth, A. Sárkány and L. Gucci , Roadmap to new catalyst system: Palladium nanoparticles, Chapter 5. in "Nanotechnology in Catalysis", eds.: G.A. Somorjai, S. Hermans and B. Zhang, Kluwer Publ. Co., Amsterdam 2003
- Guczi, G. Pető, A. Beck and Z. Pászti, Modeling Transition Metal Nanoparticles: The Role of Size Reduction in Electronic Structure and Catalysis, *Topics in Catalysis*, **29**, 129 (2004)
- L. Gucci, Bimetallic Nanoparticles: Featuring structure and selectivity, *Catal. Today*, **101/2**, 53 (2005)
- László Gucci, Krisztina Frey, Andrea Beck, Gábor Pető, Csaba Daróczy, Norbert Kruse and Sergey Chenakin, Iron oxide overlayer on Au nanoparticles supported by SiO<sub>2</sub>/Si(100): Promoting effect of Au on the catalytic activity of iron oxide, *Appl. Catal. A.*, **291**, 116 (2005)
- László Gucci, G. Stefler, O. Geszti, Zs. Koppány, Z. Kónya, É. Molnár, M. Urbán, I. Kiricsi, CO Hydrogenation over Cobalt and Iron Catalysts Supported over Multiwall Nanotubes. Effect of Preparation, *J. Catal.*, **244**, 24 (2006)
- L. Gucci, Z. Pászti, K. Frey, A. Beck, G. Pető, Cs. S. Daróczy, Modeling gold/iron oxide interface system, *Topics in Catalysis*, **39**, 137 (2006)
- A. M. Venezia, F. L. Liotta, G. Pantaleo, A. Beck, A. Horváth, O. Geszti, A. Kocsonya and L. Gucci, Effect of Ti (IV) loading on CO oxidation activity of gold on titania doped silica, *Appl. Catal. A.*, **310**, 114 (2006)
- Tamás Keszthelyi, Zoltán Pászti, Tímea Rigó, Orsolya Hakkel, Judit Telegdi, and László Gucci, Investigation of Solid Surfaces Modified by Langmuir-Blodgett Monolayers Using Sum-Frequency Vibrational Spectroscopy and X-ray Photoelectron Spectroscopy, *J. Phys. Chem. B.*, **110**, 8701 (2006)
- Anita Horváth, Andrea Beck, Antal Sárkány, Györgyi Stefler, Zsolt Varga, Olga Geszti, Lajos Tóth and László Gucci, Silica supported Au nanoparticles decorated by TiO<sub>2</sub>: formation, morphology and CO oxidation activity, *J. Phys. Chem. B.*, **110**, 15417 (2006)