

CURRICULUM VITAE

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Date and Place of birth: 28 June 1977, Považská Bystrica, Slovak Republic
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Education:

- **PhD., Macromolecular chemistry (2000-2004), Slovak Academy of Sciences, Polymer Institute, Bratislava, Slovak Republic**
Title: "Spectral characteristics and photochemical stability of fluorescent probes in solution and in polymer matrix"
(supervisor Dr. Štefan Chmela)
- **MSc. (Slovak equivalent, Mgr.), Organic chemistry (1995-2000) Comenius University, Faculty of Natural Sciences, Bratislava, Slovak Republic**
Title: "Synthesis of 1-phenylmethyl-4-[bis(4-R-substituted-phenyl)methyl]piperidines from alcohols using a system TES-CF₃COOH"
(supervisor Dr. Tibor Gögh)

Professional Experiences:

- **Institute of Applied Synthetic Chemistry, Division Macromolecular Chemistry, Vienna University of Technology, 1060 Vienna, Austria**, postdoctoral study (06/2007-05/2008)
Subject of the study: Carbohydrate-Based Polymer Supports for Solid Phase Synthesis and Biomedical Application.
- **Center for Education and Research on Macromolecules (CERM), University of Liège, Sart-Tilman B6, B-4000 Liège, Belgium**, postdoctoral study (04/2005-03/2006)
Subject of the study: Preparation of perfluorinated polymer electrolytes for direct methanol fuel cell applications.
- **Technical University, Institute of Organic Chemistry, Dresden, Germany**, assistantship with Doz. Dr. Wolf D. Habicher (11/2001-12/2001 and 11/2002-12/2002)
Subject of the study: The first stage: Synthesis of new additives based on 4-substituted-1,8-naphthalic anhydride. The second stage: Palladium catalyzed amination of halides using a catalyst system Pd₂(dba)₃ / P(t-Bu)₃.
- **Slovak Academy of Sciences, Department of Polymer reactions, Polymer Institute, Bratislava, Slovak Republic**, research scientist (9/2003-present).
- **Slovak Academy of Sciences, Polymer Institute, Bratislava, Slovak Republic**, doctoral study (9/2000 – 8/2003).

Grants, Memberships and Awards:

- **Structural Fund –EU:**
Advanced Bio-Friendly Polymers – POLYFRIEND (2007-2013)
Integration of Nano-Biology and ICT to Provide a Continuous Care and Implantable Monitoring System for Diabetic Patients – CEZANNE (2006-2011)
- **Grant Agency for Support of Science and Technology of Slovak Republic APVV:**
 - Photochemically induced atom transfer radical polymerization (photoATRP) in the presence of limited amount of air Vis-CUM (2016-2020)
 - Smart MoS₂ platform for cancer diagnosis and targeted treatment (2016-2020)
 - Potential risk of metal and metal oxide nanoparticles used for biomedical applications: focus on reproductive and immune systems and brain ENDONANOSAFE (2016-2020)
 - Living/controlled polymerizations: Optimization of polymerization process toward well-defined polymers with targeted architecture and properties – LIVICOP (2011-2014)

- Nanoparticles-based sensors of gaseous biomarkers of diseases – NANOSEN (2015-2018)
- Grant Agency VEGA: Biodegradable polymers for agricultural applications and food packaging (2014-2016)
- Member of the Slovak Chemical Society
- The award honorable mention in “Scientist of the Slovak Republic of the year 2005” granted by the Union of Slovak Societies for Science and Technology
- Team member of Department of Special Polymers and Biopolymers awarded as “Scientific and technological team of the year 2010”

Research Interests:

- Controlled free-radical polymerization
- Organic synthesis of fluorescent probes for polymer chemistry
- Superabsorbent hydrogels
- Suspension and emulsion polymerization of monomers from renewable resources
- Preparation of biodegradable hydrogels
- Photochemistry
- Preparation and stabilization of polymers
- Spectral characterization of monomers and polymers
- Low temperature methanol fuel cells

Scientific techniques and skills:

- Organic synthesis
- Spectroscopic methods: NMR, UV-VIS, FT-IR, MS, TEM, steady-state fluorescence, EPR
- Chromatographic techniques: HPLC, GPC, TLC
- Thermal methods: TGA, DSC
- Photochemical processes
- Polymerization methods: block and solution polymerization, controlled free-radical polymerization, emulsion and suspension polymerization, ATRP
- Stabilization of polymers

Additional skills:

- Languages: english, german (limited), czech
- Driving license
- Good PC skills (Ms Office, Origin, Mestrec, ACD labs, Isis Draw, Chem Draw, Sciencefinder, etc.)
- Sport (football, running, trekking, skiing)
- Music (piano playing)

Selection of 5 most important publications:

1. Jozef Kollár, Miroslav Mrlík, Daniela Moravčíková, Zuzana Kroneková, Tibor Liptaj, Igor Lacík, and Jaroslav Mosnáček., “Tulips: A Renewable Source of Monomer for Superabsorbent Hydrogels“, *Macromolecules* (2016) 49 (11), 4047-4056
2. Jean-Michel Thomassin; Jozef Kollár; Giuseppe Caldarella; Albert Germain; Robert Jérôme and Christophe Detrembleur., “Beneficial effect of carbon nanotubes on the performances of Nafion membranes in fuel cell applications”, *Journal of Membrane Science*. 303 (2007) 252–257.
3. Kollár, Jozef - CHmela, Štefan - Hrdlovič, Pavol. “Spectral properties of bichromophoric probes based on pyrene and benzothioxanthene in solution and in polymer matrices“, *Journal of Photochemistry and Photobiology A* 270 (2013) 28-36.
4. Kollár, J., Hrdlovič, P., Chmela, Š., Sarakha, M., Guyot, G., “Synthesis and spectral characteristics of di-substituted 1,8-naphthaliimides: Bi-radical formation”, *Journal of Photochemistry and Photobiology A: Chemistry* 195 (2008) 64-71.
5. Stach, M., Kroneková, Z., Kasák, P. - Kollár, J., Pentrák, M., Mičušík, M., Chorvát, D., Nunney, T.S., Lacík, I., “Polysulfobetaine films prepared by electrografting technique for reduction of biofouling on electroconductive surfaces“, *Applied Surface Science*, vol. 257, (2011) 10795-10801.

List of references:

- **Igor Lacík, DrSc.**, Director of Polymer Institute, Slovak Academy of Sciences, Bratislava, Slovak Republic, Igor Lacik@savba.sk
- **Simone Knaus, Ao. Univ. Prof.**, Institute of Applied Synthetic Chemistry, Vienna University of Technology, 1060 Vienna, Austria, sknaus@ias.tuwien.ac.at
- **Robert Jérôme, Prof.**, Center for Education and Research on Macromolecules (CERM), University of Liège, Sart-Tilman B6, B-4000 Liège, Belgium, rjerome@ulg.ac.be
- **Wolf D. Habicher, Doz. Dr.**, Technical University, Institute of Organic Chemistry, Dresden, Germany, wolf.habicher@chemie.tu-dresden.de
- **Tibor Gögh, Dr.**, Synthetic Contract Laboratories SYNCOLA, Comenius University, Faculty of Natural Sciences, Bratislava, Slovak Republic, goegh@ba.sanet.sk