

društvene vijesti



Predstavljamo Vam ... Međunarodni izdavački savjet

Majda Žigon

Nacionalni institut za kemiju, Ljubljana, Slovenija
National Institute of Chemistry, Ljubljana, Slovenia

Životopis

Majda Žigon znanstveni je savjetnik u Nacionalnom institutu za kemiju i docent na Sveučilištu u Ljubljani na Fakultetu kemije i kemijske tehnologije. Od 1973. bila je istraživač u Nacionalnom institutu za kemiju (NIC), a od 1997. ravnatelj Laboratorija za kemiju i tehnologiju polimera. Svoj istraživački rad započela je kao dodiplomski student radeći svoj diplomski rad pod nazivom "Regulacija vodene otpornosti polikondenzata baziranih na smolama uree" pod vodstvom prof. dr. Ivana Vizovška na Sveučilištu u Ljubljani na Fakultetu prirodnih znanosti i tehnologije, Odsjek kemije i kemijske tehnologije (sada Fakultet kemije i kemijske tehnologije). Diplomirala je na kemijskoj tehnologiji 1973., a magistrirala iz kemije 1977. Svoj magistarski rad naslovljen "Neka svojstva metal-tetrametilendiokarbamata" izradila je u laboratoriju analitičke kemije u NIC-u pod vodstvom prof. dr. Sergeja Gomiščeka. Godine 1976. prešla je u Laboratorij za polimernu kemiju i tehnologiju gdje je bila uključena u sintetiziranje i karakteriziranje raznih vrsta polimera. Fenolne smole bile su cilj njezine doktorske disertacije naslovljene "Ispitivanje reakcije između nezasićenih aldehida i fenola", a radila je pod vodstvom prof. dr. Ivana Vizovška. Titulu doktora kemijskih znanosti primila je na Sveučilištu u Ljubljani 1987.

Njezini su sadašnji istraživački interesi polimeri sa skrojenom strukturom i svojstvima kao segmentirani poliuretani (PU), PU ionomeri, kovalentni i supramolekularni postrani tekući kristalični polimeri, poluinterpretirane polimerske mreže temeljene na funkcionaliziranim PU i polimetakrilatima, hiperrazgranati polimeri i vodljivi polimeri koji se temelje na supstituiranim polianilinima. Rezultate je objavila u 86 članaka, među kojima je 48 u časopisima indeksiranim u SCI-u. Primila je nagradu fundacije "France Prešeren" za studente 1974. a nagradu fundacije "Boris Kidrič" 1987. zajedno s profesorom dr. Antonom Šebenikom i dr. Uči Osredkarom.

U 1992. Majda Žigon bila je 6 mjeseci postdoktorski stipendist u Institute Charles Sadron u Strasbourgu, Francuska, pod voditeljstvom dr. Zlatke Grubišić Gallot, koja je poznata po uvođenju univerzalne kalibracije za raspoređivanje apsolutne molarne mase polimera. U Strasbourgu je primijenila naprednu tehniku karakterizacije nazvanu SEC, povezanu s fotometrom za niskokutno svjetlosno raspršenje (SEC-LALLS). To proučavanje nastavila je nakon što je laboratorij u 1996. nabavio višekutni fotometar za svjetlosno raspršenje. Istraživanje usredotočeno na ispitivanje raspada i spajanja makromolekula u razrijeđenim otopinama kao i postizanje optimalnih eksperimentalnih uvjeta za određivanje točne molekularne mase, za što je pretpostavka topivost na molekularnoj razini.

Curriculum Vitae

Majda Žigon is a Scientific Councilor at the National Institute of Chemistry, Ljubljana, and an Assistant Professor at the University of Ljubljana, Faculty of Chemistry and Chemical Technology. Since 1973 she has been a researcher at the National Institute of Chemistry (NIC), from 1997 as the Head of Laboratory for Polymer Chemistry and Technology.

She began her research work on polymers as an undergraduate student preparing a diploma work entitled "Regulation of water resistance of polycondensates based on urea resins" under the supervision of Prof. Dr. Ivan Vizovišek at the University of Ljubljana, Faculty of Natural Sciences and Technology, Department of Chemistry and Chemical Technology (now Faculty of Chemistry and Chemical Technology). She received her B. Sc. in Chemical Technology in 1973 and M. Sc. in Chemistry in 1977. Her Master's thesis entitled "Several properties of metal tetramethylenedithiocarbamates" was done at the Laboratory of Analytical Chemistry of NIC under the supervision of Prof. Dr. Sergej Gomišček. In 1976 she moved to the Laboratory of Polymer Chemistry and Technology where she was involved in the synthesis and characterization of various kinds of polymers. Phenolic resins were the topic of her Ph.D. thesis entitled "Investigation of reactions between unsaturated aldehydes and phenols" and made under the supervision of Prof. Dr. Ivan Vizovišek. She received her Ph.D. in Chemical Sciences from the University of Ljubljana in 1987.

Her present research interests are in polymers with tailored structure and properties such as segmented polyurethanes (PU), PU ionomers, covalent and supramolecular side chain liquid crystalline polymers, semi interpenetrated polymer networks based on functionalized PU and polymethacrylates, hyperbranched polymers and conductive polymers based on substituted polyanilines. The results were published in 86 papers, 48 among them in the journals indexed by SCI. She received the France Prešeren Foundation Award for students in 1974, and Boris Kidrič Foundation Award in 1987, together with Prof. Dr. Anton Šebenik and Dr. Uči Osredkar.

In 1992, Majda Žigon was a postdoctoral fellow for six months at the Institute Charles Sadron in Strasbourg, France, under supervision of Dr. Zlatka Grubišić Gallot, well known for introducing a universal calibration for the determination of absolute molar mass distributions of polymers. In Strasbourg, she used an advanced characterization technique, namely SEC coupled to a low angle light scattering photometer (SEC-LALLS). She continued this study after the Laboratory purchased a multi-angle light scattering photometer in 1996. Research focused on the investigation of degradation and association of macromolecules in dilu-

Bila je istraživač na projektima nacionalnih temeljnih i primijenjenih istraživanja kao i na programu istraživanja i razvojnih projekata za slovensku industriju. Majda Žigon bila je uključena i u europske projekte. (1992. – 2002.: INCO-Copernicus, poliuretanski materijali pogodni za okolinu kojima su prethodili oni kompaktne strukture), IUPAC Macromolecular project No. 990211/400/00 (2000. – 03.) i nekoliko projekata s Francuskom (1994. – 95., 1997. – 99., 2001.: Stvaranje micela od PS-PMMA blok-polimera u selektivnim otapalima proučavanima pomoću SEC u kombinaciji sa raspršivanjem svjetla) Češkom (1998. – 99., 2001. – 03.: sinteza i svojstva novokonjugiranih polimera) i u posljednje vrijeme s Hrvatskom (2003. – 04.: struktura i dinamika međuproduktivnih mrežastih polimera).

Od 1998./99. predaje kemiju polimera i tehnologiju plastike na dodiplomskom programu na Sveučilištu u Ljubljani, na Fakultetu kemije i kemijske tehnologije i na Akademiji likovnih umjetnosti. Struktura i stereokemija polimera predmet je na poslijediplomskom studiju Fakulteta kemije i kemijske tehnologije. Bila je mentor brojnim studentima u stjecanju magisterija i doktorata.

Predsjednik je Sekcije za polimere u Slovenskom kemijskom društvu, nacionalni predstavnik u Europskoj federaciji za polimere, glavni urednik za polimere u časopisu *Materijali i tehnologije* i član savjetodavnog tijela časopisa *Polimeri i Kemija u industriji*. Također je član Slovenskog kemijskog društva, Slovenskog društva za materijale, Slovenskog društva za vakuumsku tehniku i član IUPAC-a.

te solutions as well as optimization of experimental conditions for accurate molar mass determination for which the solubility on a molecular level is a prerequisite.

She has been the principal investigator of national basic and applied research projects and program as well as research and development projects for the Slovenian industry. She has been involved in European projects (1999-2002: INCO-Copernicus, Environmentally friendly polyurethane materials from precursors of compact architecture), IUPAC Macromolecular Division project No 990211/400/00 (2000-03) and several bilateral projects with France (1994-95, 1997-99, 2001: Micelles formation of PS-PMMA block copolymers in selective solvents studied by SEC in combination with light scattering), Czech republic (1998-99, 2001-03: Synthesis and properties of novel conjugated polymers), and lately with Croatia (2003-04: Structure and dynamics of interpenetrating polymer networks).

Since 1998/99 she has been teaching Polymer Chemistry and Technology of Plastics in the undergraduate program at the University of Ljubljana, Faculty of Chemistry and Chemical Technology (FCCT), and Academy of Fine Arts, respectively. The Structure and Stereochemistry of Polymers is a subject in the graduate program of FCCT. She has been a supervisor for a number of graduate M.Sc. and Ph.D. students.

She is a president of the Section of Polymers at the Slovenian Chemical Society, national representative in European Polymer Federation, a Topic Editor for polymers of the journal *Materials and Technology*, and member of advisory boards of the journals *e-Polymers* and *Kemija u industriji*. She is also a member of Slovenian Chemical Society, Slovenian Society of Materials, Slovenian Society for Vacuum Technique and IUPAC fellow.

**Odabrane reference:
Selected published papers:**

M. Žigon, A. Šebenik, U. Osredkar, I. Vizovišek, Synthesis and characterization of resorcinol-cinnamaldehyde resins, *Angew. Makromol. Chem.* **148** (1987) 127-135.

M. Brecl, M. Žigon, T. Malavašič, Side-chain liquid crystal polyurethanes with azobenzene mesogenic moieties – the influence of spacer length on hydrogen bonding at different temperatures, *J. Polym. Sci.; Polym. Chem.* **36** (1998) 2135-2146.

M. Žigon, A. Mirčeva, T. Malavašič, Z. Grubišič-Gallot, Characterization of polyether-polyurethanes by SEC coupled with viscometry and LALLS, *J. Liq. Chromatogr.* **16**:17 (1993) 3813-3825.

A. Mirčeva, N. Oman, M. Žigon, Side-chain liquid crystalline polyurethanes on the basis of biphenyl mesogenic units, *Polym. Bull.* **40** (1998) 469-476.

Z. Grubišič-Gallot, M. Žigon, J. Sedláček, Y. Gallot, Study of polystyrene-block-poly(methyl methacrylate) micelles by sec/mals: Determination of molecular weight and size distributions, *J. Liq. Chromatogr. & Rel. Technol.* **22** (1999) 2109-2124.

I. Mav, M. Žigon, M. Zupan, A. Šebenik, J. Vohlidal, Analysis and characterization of sulfonated polyaniline: The effects of reaction conditions, *J. Polym. Sci.: Polym. Chem.* **38**:18 (2000) 3390-3398.

E. Žagar, M. Žigon, Characterization of a commercial hyperbranched polyester based on 2,2-bis(methylol propionic)acid, *Macromolecules* **35**:27 (2002) 9913-9925.

J. Čulin, S. Frka, M. Andreis, I. Šmit, Z. Veksli, A. Anžlovar, M. Žigon, Motional heterogeneity of segmented polyurethane-polymethacrylate mixtures: An influence of functional groups concentration, *Polymer* **43**:14 (2002) 3891-3899.

G. Ambrožič, J. Mavri, M. Žigon, Liquid-crystalline complexes of polyurethane containing isonicotinamide moiety with 4-dodecyloxybenzoic acid, *Macromol. Chem. Phys.* **203** (2002) 439-447.

M. Huskić, M. Žigon, Side-chain polyesters and polyester hydrochlorides based on terephthalic acid, *Polymer* **44**:20 (2003) 6187-6193.