**RNDr. Marián Sedlák, DrSc.**
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**Current position:**
Senior researcher
Head of the Laboratory of experimental chemical physics IEP SAS

**Profile:**
RNDr. Marián Sedlák, DrSc. works in the field of chemical physics with a focus on soft matter progressive materials and technologies. The emphasis is on materials and technologies based on self-assembly on a nano-level (bottom-up approach). He studied biophysics and chemical physics at Šafarik University in Košice and Charles University in Prague, then continued his PhD studies in the field of physical chemistry at the Institute of macromolecular chemistry of the Czechoslovak academy of sciences in Prague. Later on he worked as a post-doctoral fellow at the Univeristy of Southern California in Los Angeles. He received the degree Doctor of sciences (DrSc.) in 1998 in the field of chemical physics. He completed some medium-term stays in Japan and Israel and since 2008 he is the head of the Laboratory of experimental chemical physics at the Institute of experimental physics SAS in Košice. He is an author of several chapters in book monographs from renowned publishers as Clarendon Oxford or Marcel Dekker New York, more than 40 scientific publications with average author contribution 70%, which have been cited more than 1300 times according to SCI and more than 1600 times according to the Google Scholar. He gave numerous lectures on international symposia. He is the author of 3 patents and 4 patent applications (Industrial Property Office of the Slovak Republic and European Patent Office).

**Work experiences:**

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| 1985 - now | Institute of experimental physics SAS in Košice |
| 1985 - 1989 | Institute of macromolecular chemistry of the Czechoslovak academy of sciences in Prague (PhD) |
| 1990 - 1991 | Univeristy of Southern California, Los Angeles |

**Projects:**
1. "Polyelectrolyte Structure and Dynamics", grant from National Science Foundation USA, No. 11001, 1993-1994
2. "Polyelectrolytes", grant from Slovak-American Science and Technology Program , 1994-1997 (grant No. 92005)
3. "The application of quasielastic light scattering to the study of italian crater lake and adriatic sediments", grant from the European Commission , program PECO, 1995-1996, (contract No. CIPD-CT94-0116).
4. “Ionic polymers: solution behavior and selected methods of characterization. , grant from the Presidium of SaS, Program of support of excellent projects and researchers in SAS , 6/2002 – 12/2005, (grant No. 2/8001/22).
5. Centre of excellence for progressive materials with nano- and submicron structure, EU Structural Fund projects 26220120019 (2009-2011) and 26220120035 (2010-2013).

**Publications:**

5 most significant publications:
1. **SEDLÁK, Marián**: A Novel Approach to Controlled Self-Assembly of pH-Responsive Thermosensitive Homopolymer Polyelectrolytes into Stable Nanoparticles. Advances in Colloid and Interface Science, Volume 232, June 2016, p. 57–69 (5-year IF = 10.42)
2**. SEDLÁK, Marián,** RAK, Dmytro: Large-Scale Inhomogeneities in Solutions of Low Molar Mass Compounds and Mixtures of Liquids: Supramolecular Structures or Nanobubbles?, J. Phys. Chem. B 117 (8), p. 2495–2504, 2013. (5-year IF = 4.061)
3. **SEDLÁK, Marián**: Structure and dynamics of polyelectrolyte solutions by light scattering, kapitola v monografii "Physical Chemistry of Polyelectrolytes" ,p. 1-58, (T. Rageva ed.), Marcel Dekker, New York, 2001.
4**. SEDLÁK, Marián:** Large-Scale Supramolecular Structure in Solutions of Low Molar Mass Compounds and Mixtures of Liquids: I. Light Scattering Characterization, J. Phys. Chem. B, 110 (9), p. 4329 -4338, 2006. (IF 2006 = 4.115).
5. **SEDLÁK, Marián,** KOŇÁK, Čestmír: A New Approach to Polymer Self-assembly into Stable Nanoparticles: Poly(ethylacrylic acid) Homopolymers, Macromolecules, 42, p.7430–7438, 2009. (IF 2008 = 4.407)

**Active patent applications and patents:**

**Patents:**
1**. SEDLÁK, Marián**, KOŇÁK, Čestmír: Preparation method of polymeric nanoparticles on the basis of poly(ethylacrylic acid) homopolymers. Industrial Property Office of the Slovak Republic, Patent No. 287951.
2. **SEDLÁK, Marián**, KOŇÁK, Čestmír: Polymeric nanoparticles on the basis of poly(propylacrylic acid) homopolymers and their preparation method. Industrial Property Office of the Slovak Republic, Patent No. 288071.
3. **SEDLÁK, Marián,** RAK, Dmytro: Spôsob merania obsahu alkánov v alkoholoch metódou nanosegregácie vo vodných roztokoch, ÚPV SR, Patent č. 288560. Udelený 16.3. 2018. Dátum sprístupnenia patentu verejnosti 7.5.2018.
**Patentapplications:**
4. **SEDLÁK, Marián,** RAK, Dmytro: Spôsob stanovenia obsahu hydrofóbnych látok v organických vodou miešateľných kvapalinách, PP50001-2015. Úrad priemyselného vlastníctva SR. Podaná 9.1.2015.
5. **SEDLÁK, Marián,** RAK, Dmytro: A Method for Determination of Content of Hydrophobic Compounds in Water-Miscible Organic Liquids, World Intellectual Property Organization, PCT application number PCT/SK2015/050002. Medzinárodná patentová PCT (Patent Cooperation Treaty) prihláška. Podaná 10.1.2015.
6. **SEDLÁK, Marián,** RAK, Dmytro: A Method for Determination of Content of Hydrophobic Compounds in Water-Miscible Organic Liquids, European Patent Office, application number EP15710288.0, file: EP3092487. Podaná 5.7.2016.
7. **SEDLÁK, Marián,** RAK, Dmytro: Spôsob čistenia organických vodorozpustných látok od hydrofóbnych kontaminantov, ÚPV SR, číslo prihlášky: PP50015-2016. Podaná 15.3.2016.
8 **SEDLÁK, Marián,** RAK, Dmytro: A method for purification of water soluble compounds from hydrophobic contaminants. European Patent Office, application number EP17160213.9, submitted 9.3. 2017

**Awards and memberships:**
2002 – Grant awarded by the Presidium of SAS as a part of the " Program of support of excellent projects and researchers in SASu"
2000 – Nomination and attendance at a scientific event "Scientia Europaea" in Strasbourg, meeting of "the most promising young European scientists" – age under 40
1992 – Member of the American Physical Society
1992 – Member of the American Chemical Society