



Broj: 10-162/24-2018.

Zagreb, 11 srpnja 2018.

ZNANSTVENO VIJEĆE ZA NAFTNO-PLINSKO GOSPODARSTVO I ENERGETIKU

**P O Z I V
NA II SJDNICU
SEKCIJE ZA PETROKEMIJU**

koja će se održati u

**utorak, 17. srpnja 2018. godine u 11 sati
u maloj sjedničkoj dvorani Hrvatske akademije znanosti i
umjetnosti, Zrinski trg 11 , Zagreb**

Predlaže se sljedeći

DNEVNI RED

1. Pristupno predavanje:

Prof.dr.sc. Jadranka Travaš-Sejdić: *Polymer-Grafted Conducting Polymers: Towards Intrinsically Self-healing and Stretchable Polymer Electronics*

2. Razno

Pročelnik
Sekcije za petrokemiju

Prof.dr.sc. Ante Jukić

Sažetak:

Electrically conducting polymers (CPs) display unique optoelectronic properties which makes them excellent alternatives to traditional conductors and semiconductors. Despite the many attractive properties of CPs, the poor solubility of CPs makes them difficult to process and has limited their use. These drawbacks can be overcome by functionalization of CPs with various moieties. An extension of that approach is grafting of CP backbone with polymeric sidechains; that enables modification of optoelectronic, chemophysical and mechanical properties of the CPs, as well as the possibility of further functionalization.

We have previously demonstrated synthesis and characterization of variously functionalized conducting polymers with a range of grafted polymeric sidechains for biological applications; for example, grafting of poly(ethylene glycol methyl methacrylate), poly(acrylic acid) and poly(n-butyl acrylate), from either a conducting polymer film's surface or the CP macroinitiators in solution. 3-6 These materials have shown a promise as smart biointerfaces, responsive to various stimuli, such as electrochemical, pH, thermal and salt concentration. In this presentation, we will discuss recent developments in development of that class of materials, where we extend the principle of grafting CPs to realize intrinsically stretchable and self-healing grafted conducting polymers. The physical, mechanical and electrochemical properties of these new materials will be presented and their potential uses in stretchable electronics will be discussed.

Name

Title: Professor

Affiliation, Country:

The University of Auckland, New Zealand

Phone: +6493737599

E-mail: j.travas-sejdic@auckland.ac.nz

Personal History:

2002- The University of Auckland

2003- Director Polymer Electronics Research Centre, The University of Auckland

Research interests: advanced materials for biosensors and bioelectronics



1 Polymer Electronics Research Centre, The University of Auckland, Auckland, New Zealand

2 MacDiarmid Institute for Advanced Materials and Nanotechnology, New Zealand

Jadranka Travas-Sejdic received her MSc in Zagreb and Ph.D. from University of Auckland, New Zealand in 1999. She worked as a scientist in Genesis Research Corporation Limited and as a scientist and senior project manager in Pacific Lithium Limited, Auckland, before returning to the University of Auckland in 2002 where she is currently a Professor at the School of Chemical Sciences and Director of the Polymer Electronic Research Centre (PERC). She has been a Principal Investigator of the MacDiarmid Institute since 2007. She is a recipient of the Easterfield Medal, a Fellow of the International Union of Pure and Applied Chemistry, a Councilor of the Pacific Polymer Federation, a Fellow of the New Zealand Institute of Chemistry and since 2017 fellow of the Royal Society Te Apārangi.

Professor Travas-Sejdic's current research is in the field of advanced polymeric materials, particularly those based on conducting polymers, and their application in health and bioelectronics, and polymer electronic devices. The current projects include development of novel gene sensors; conducting polymers-based switchable surfaces and actuators; and development of novel tools for micro- and nano-fabrication and characterization of conducting polymers. She has published more than 240 articles, including 8 book chapters. Her h-index is 39 and she has more than 5000 citations.