

Dragi čitatelji,

Svijest o potrebi zaštite okoliša, životne sredine i zdravlja već je dulje vrijeme pokretač niza razvojnih projekata s ciljem smanjenja negativnih posljedica izazvanih djelovanjem čovjeka i razvojem civilizacije ili čak poboljšanja povoljnih okolnosti neizbježno potrebnih za održavanje zdravog života na zemlji. Ekološke pretpostavke i zahtjevi snažno utječu i na razvojne osnove u našoj sferi aktivnosti pridobivanja i prerade nafte. Svjedoci smo promicanja novijih norma koje su oblikovane s ciljem osiguranja što manjeg štetnog utjecaja korištenja motornih i energetske goriva na atmosferu, tlo i vode. U segmentu korištenja dometa i mogućnosti koje nam pružaju strojevi koji nas oslobađaju potrebe korištenja dijela živog rada nastojimo smanjiti moguće štetne utjecaje maziva za podmazivanje strojeva i vozila na zdravlje i okoliš. Konačno, cilj nam je postići što je moguće manji utjecaj tehnologije pridobivanja i prerade nafte i proizvodnje naftnih derivata - goriva i maziva na okoliš.

Naš je simpozij Goriva 2002 potvrdio temeljem brojnih radova vezanih uz problematiku zaštite okoliša koji su već i u programu rada simpozija bili svrstani u odgovarajuću sekciju usmjerenu na istraživanja i rezultate u segmentu prerade nafte te analitičkim tehnikama, da je spomenutoj tematici posvećena vrlo velika pažnja. Pitanja koja postavljaju problemi ekologije bila su obrađivana ili u najmanju ruku dotaknuta i u velikom broju referata i izlaganja drugih sekcija našeg simpozija.

Želja mi je da posebno istaknem nekoliko radova s temama zaštite okoliša koji su posebno vrijedni budući da obrađuju pitanja koja nam osvjetljavaju stanje i daju podatke o realnoj situaciji u našoj sredini. Rad autora I. Krivdić, S. Švel-Cerovečki i D. Sedlar iz INA Sektora strateškog razvoja, istraživanja i investicija pionirski je rad analize parametara radne okoline koji mogu utjecati na zdravlje uposlenika. Analizirani su u dvije mjerne godine podatci o mikroklimi, osvjetljenosti, kemijskim štetnostima i buci u rafinerijama u Rijeci i Sisku. Većina mjerenja koja su proveli stručnjaci INA-SSRII na osnovi ovlaštenja Ministarstva rada i socijalne skrbi ispod su graničnih vrijednosti propisanih zakonskim odredbama. U daljnjoj fazi istraživanja trebalo bi provesti korelaciju parametara radnog okoliša s brojem i vrstom oboljenja radnika.

Ekotoksičnost kao biološki pokazatelj onečišćenja rafinerijskih otpadnih voda vrlo je zanimljiva i vrijedna tema koju su autori S. Korunić-Košćina, M. Mioč i V. Bobić iz Rafinerije nafte Rijeka i Sektora strateškog razvoja, istraživanja i investicija izložili temeljem petogodišnjeg praćenja ekotoksičnosti otpadnih i podzemnih voda. Autori su koristili fluorescentne bakterije koje mogu poslužiti kao indikator povišene razine zasoljenja. Daljnjim istraživanjima djelovanja onečišćujućih tvari očekujemo da će autori prikupiti vrijedne podatke kojima će moći usmjeriti rafinerijsku obradu otpadnih voda u željenom smjeru.

Ostatci napuštenih tehnologija prerade nafte i proizvodnje naftnih derivata, među kojima istaknuto mjesto ima gudron koji je ostatak rafinacije uljnih destilata pomoću

sumporne kiseline, značajni je faktor ugrožavanja tla i podzemnih vodotokova. Mogućnost ekološke sanacije gudrona postupkom spaljivanja obradili su autori F. Kokalj, N. Samec i B. Perdija s Fakulteta za strojništvo Maribor iz susjedne Slovenije. Cilj je ocijeniti mogućnosti saniranja starih deponija gudrona u Sloveniji. Spaljivanje je provedeno na osnovi dvije tehnologije s različitim postupcima obrade dimnih plinova. Autori su izložili rezultate dobivene istraživanjima temeljem kojih postignuti rezultati glede štetnih sastojaka u dimnim plinovima gotovo u potpunosti udovoljavaju europskim normama. U uzorcima pepela određena je koncentracija teških metala koja je iznad dopuštenih količina za odlaganje na deponije za inertni otpad. Autori ocjenjuju da bi daljnjim radovima trebalo ocijeniti i izraditi studiju isplativosti postupka zbrinjavanja gudrona spaljivanjem uz predvidive troškove obrade plinova i ostataka spaljivanja.

Simpozij Goriva 2002 je veliki dio sadržaja sekcije postera u kojoj je bilo prikazano ukupno 22 rada posvetio temama vezanim uz problematiku zaštite okoliša. Jedan je rad obradio promociju zaštite okoliša, tri su se referata bavila sustavom upravljanja zaštite okoliša, četiri su obrađivala teme vezane uz analitiku zaštite okoliša, a jedan je bio vezan uz tehnologiju u funkciji zaštite okoliša.

Na kraju možemo sa zadovoljstvom istaći da su autori dali dobar uvid u postojeće stanje okoliša, prikazali aktivnosti vezane uz rješavanje trenutačne problematike te dali prijedloge prevencije s odrazom na lokalnu i šire, globalnu sredinu. Sudionici našeg simpozija su svojim interesom za izlagane i obrađivane teme, prisutnošću na prezentacijama i raspravama pokazali veliko zanimanje i potvrdili značaj zaštite okoliša. Vjerujemo da će se na sljedećem skupu obrađivana tematika proširiti i na problematiku zaštite zdravlja.

Vaš urednik,
Ivo Legiša

Dear Readers,

Awareness of the need for the protection of environment, living surroundings and health has for some time now been the motivator of a number of development projects with the purpose of reducing negative impacts caused by human activities and development of civilization, or even of advancing favourable circumstances necessary for maintaining a healthy life on earth. Environmental assumptions and requirements have a powerful impact on developmental foundations also in our field of oil recovery and processing. We see the promotion of more recent standards shaped with the purpose of ensuring as low a negative impact as possible of using motor and power fuels on atmosphere, soil and waters. To the extent to which we are using the achievements and the possibilities offered to us by the machinery depriving us of the need to use a part of the living workforce, we are trying to cut down the possible noxious impacts of lubricants for the lubrication of machinery and vehicles on health and environment. Finally, our purpose is to achieve as low as possible an impact of the technology of oil recovery and processing of oil products – fuels and lubricants – on the environment.

Our Symposium Fuels 2002 has confirmed – based on a number of papers associated with the issues of environmental protection, constituting in the Symposium's programme of work a section apart directed towards research and results in the segment of oil processing and analytical techniques – that the topic in question has received a considerable attention. Questions raised by environmental issues were treated or at least mentioned also in a number of papers and discussions of other sections of our Symposium.

It is my desire to point out in particular several papers with the topic of environmental protection that are of particular significance, since they treat issues indicating the condition and providing information on the real situation in our midst. The authors I. Krivdić, S. Švel-Cerovečki and D. Sedlar of INA 's Strategic Development, Research and Investments Sector presented a pioneer work of analyzing working environment parameters which may impact the health of the employees. Analyzed during the two years of measurement were the data on microclimate, illumination, chemical noxious effects and noise at the refineries in Rijeka and Sisak. Most measurements performed by the experts of INA-SSRII based on the licence by the Ministry of Labour and Social Welfare are below the limit values set by legal regulations. In the further research phase, it would be necessary to make a correlation between the working environment parameters and the extent and type of employee health troubles.

Ecotoxicity as the biological indicator of refinery wastewater pollution is an extremely interesting and worthy topic treated by the authors S. Korunić-Košćina, M. Mioč and V. Bobić of the Rijeka Oil Refinery and the Strategic Development, Research and Investments Sector, based on the five-year monitoring of the ecotoxicity of waste-

and underground waters. The authors have used fluorescent bacteria which may serve as the indicator of increased salinity level. With further research of the activity of pollutants, we expect that the authors shall gather valuable data through which it will be possible to direct refinery wastewater treatment in the desired direction.

Residues of the abandoned technologies of oil processing and production of oil products, among which acid sludge has a special position, being the residue of the oil distillates refining technology using sulphuric acid, a outstanding factor of threatening soil and underground watercourses. The possibility of ecological sanification of acid sludge using incineration method was treated by F. Kokalj, N. Samec and B. Perdija of the Mechanical Engineering Faculty from Maribor, from our neighbouring Slovenia. The purpose is to evaluate the possibility of sanification of old acid sludge landfills in Slovenia. Incineration was performed based on two technologies with various procedures of treating flue gases. The authors have presented results obtained through research: as regards noxious substances in the flue gases, their amount nearly entirely matches European standards. In ash samples, the concentration of heavy metals has been identified above permissible limits for disposing on sites for inert waste. The authors feel that further investigations should establish and elaborate the feasibility study of managing acid sludge using incineration, with foreseeable costs of treating gases and incineration residues.

The Fuels 2002 Symposium has devoted an important segment of its posters section – involving the total of 22 papers – to environmental protection issues. One paper covered the environmental protection promotion, three papers were about the environmental protection management system, four were treating topics about environmental protection analytics, and one was associated with technology in the function of environmental protection.

Finally, we can only be happy to say that the authors have provided a good insight into the existing state of the environment, presenting activities associated with solving the existing issues and providing prevention suggestions impacting local and even global surroundings. The participants of our Symposium have, with the interest shown in the topics presented and treated, as well as with their presence at presentations and discussions, demonstrated a great concern and confirmed the importance of environmental protection. We believe that, at the next gathering, the topics treated shall expand to involve also the issues of health protection.

Your editor,
Ivo Legiša