

društvene vijesti

Istraživačka Liga prvaka

PLIVA – Potpis sporazuma o znanstvenoj i stručnoj suradnji s FKIT-om, FBF-om, PMF-om i PBF-om okrunjen otkrivanjem poprsja hrvatskog nobelovca Vladimira Preloga u predvorju PLIVINA Istraživačkog instituta

“PLIVINI istraživači, a i oni koji će to postati, svakodnevno se susreću na terenima istraživačkih stadiona i zapravo svaki dan igraju utakmice *istraživačke Lige prvaka*,” naglasila je 3. listopada 2007. Zdravka Knežević, članica Uprave PLIVE d. d. i izvršna direktorica Istraživanja i razvoja za Europu prigodom potpisivanja Sporazuma o znanstvenoj i stručnoj suradnji između PLIVE i Fakulteta kemijskog inženjerstva i tehnologije, Farmaceutsko-biokemijskog fakulteta, Prirodoslovno-matematičkog fakulteta te Prehrambeno-biotehnološkog fakulteta Sveučilišta u Zagrebu (Prilog 1). Pritom je dodala da uspjeh u farmaceutskoj djelatnosti i njezinom istraživanju i razvoju ne nastaje preko noći, a da se “današnje istraživanje i razvoj u PLIVI oslanja upravo na baštinu, tradiciju i iskustvo naših prethodnika koji su svoje znanje i entuzijazam ugrađivali u nove proizvode: od profesora Preloga i brojnih generacija PLIVINIH i hrvatskih znanstvenika, do danas. Razvijati novi farmaceutski proizvod mogu samo znanstvenici i stručnjaci koji svakodnevno prate svjetske znanstvene spoznaje, ali jednako tako sudjeluju i u otkrivanju novih.”

The Researchers Champions League

PLIVA – The signing of the Agreement on Scientific and Professional Collaboration with the Faculty of Chemical Engineering and Technology, the Faculty of Pharmacy and Biochemistry, the Faculty of Science, and the Faculty of Food Technology and Biotechnology honoured by unveiling the bust of Croatian Nobel Laureate, Vladimir Prelog, in the lobby of PLIVA's Research Institute

“PLIVA's researchers, and those that will become just that, meet each other daily in the research arenas, and actually play *researchers' champion league* matches every day”, said Zdravka Knežević, member of PLIVA d. d. Management Board and Executive Director of the Research & Development for Europe Department, on the occasion of signing the Scientific and Professional Collaboration Agreement with the Faculty of Chemical Engineering and Technology, the Faculty of Pharmacy and Biochemistry, the Faculty of Science, and the Faculty of Food Technology and Biotechnology (*Attachment 1*), held on October 3, 2007. She also added that the success of the pharmaceutical business and its research & development did not happen overnight. “PLIVA'S research & development of today relies precisely on heritage, tradition, and the experience of our predecessors, who built their knowledge and enthusiasm into new products: starting from Professor Prelog and the numerous generations of PLIVA's and Croatia's scientists, to the present day. Only scientists and professionals who keep pace with global scientific insights can develop new pharmaceutical products, but equally so, they participate in discovering new ones.”

Prilog 1

Područja suradnje PLIVE sa FKIT-om, FBF-om, PMF-om i PBF-om*

Uvažavajući značaj znanstvene i stručne suradnje i izobrazbe kadrova, a u duhu uzajamnog razumijevanja i korisnosti, potvrđena je potreba i spremnost za međusobnom znanstvenom i stručnom suradnjom, kao i suradnjom u dodiplomskoj i poslijediplomskoj nastavi te cjeloživotnoj, kontinuiranoj, izobrazbi PLIVINIH uposlenika, koja se odnosi na:

* Sličan Sporazum PLIVA je potpisala i s Institutom “Ruđer Bošković”

Attachment 1

Fields of Cooperation between PLIVA and the Faculty of Chemical Engineering and Technology, the Faculty of Pharmacy and Biochemistry, the Faculty of Science, and the Faculty of Food Technology and Biotechnology*

Recognizing the importance of scientific and professional cooperation and staff education, and in the spirit of mutual understanding and benefit, the need and readiness has been confirmed of mutual scientific and professional cooperation, as well as cooperation in undergraduate and postgraduate classes and the life-long, continuous education of PLIVA employees, concerning the following:

* PLIVA signed a similar agreement with the “Ruđer Bošković” Institute

- suradnju u znanstveno-istraživačkim, razvojno-istraživačkim, tehnologijskim i drugim projektima te suradnju u ispitivanju i kontroli kvalitete,
- suradnju u ostalim znanstveno-istraživačkim, razvojno-istraživačkim, tehnologijskim i drugim projektima od obostranog interesa,
- suradnju u izvođenju dodiplomske i poslijediplomske nastave i specijalističkih studija te kvalifikacijskih radova studenata,
- suradnju u izvođenju specijalističkih tečajeva, seminara, radionica i sl.,
- konzultantske aktivnosti od interesa za razvoj i unapređenje proizvodnje te
- zajedničke istupe radi širenja istine o znanstvenim spoznajama iz domene farmaceutike, kemije, biokemije, molekularne biologije kemijskog i biokemijskog inženjerstva, ekologije i srodnih disciplina, kao i jačanja društvenog utjecaja struke.

- cooperation in scientific/research, development/research, technological and other projects, as well as cooperation in quality testing and control;
- cooperation in any scientific/research, development/research, technological and other projects of mutual interest;
- cooperation in holding undergraduate and postgraduate classes, and specialized studies, as well as student qualifying papers;
- cooperation in holding specialized courses, seminars, workshops, and similar;
- consulting activities of interest to the development and improvement of production, and
- joint announcements with the aim of spreading the truth about knowledge from the fields of pharmaceuticals, chemistry, biochemistry, molecular biology, chemical and biochemical engineering, ecology and related disciplines, as well as raising the professions' social influence.

Svečanom potpisivanju Sporazuma prisustvovali su istaknuti članovi hrvatske znanstvene i akademske zajednice, na čelu s prof. dr. sc. Draganom Primorcem, ministrom znanosti, obrazovanja i športa u Vladi RH te prof. dr. sc. Petrom Selemom, predsjednikom Odbora za obrazovanje, znanost i kulturu Hrvatskog sabora te prof. dr. sc. Aleksom Bjelišem, rektorom Sveučilišta u Zagrebu.

Uz potpisivanje Sporazuma, PLIVA je najavila kako će putem natječaja dodijeliti četrdesetak stipendija redovnim studentima završnih godina farmacije, kemije, kemijskog inženjerstva i tehnologije, biotehnologije i molekularne biologije, na koji će se moći javiti studenti sa svih hrvatskih sveučilišta. PLIVINI stipendisti će se već tijekom studija upoznati s praktičnom primjenom teoretskog znanja u proizvodnim procesima, kontroli kvalitete, laboratorijskim istraživanjima i razvoju proizvoda. Ovisno o afinitetima i potrebama moći će odabrati i područje za obavljanje stručne prakse, izradu diplomskog ili seminarskih radova uz stručnu pomoć i mentorstvo, a mnogi od njih već sada mogu računati na radno mjesto u PLIVI.

Povezivanjem s kompanijom Barr PLIVINO je istraživanje i razvoj dobilo nov poticaj i zamah. Do kraja ove godine PLIVA će imati 70 novih istraživača; broj projekata u području farmaceutskog, analitičkog, kemijskog i biotehnološkog razvoja znatno je povećan, više od 50 % projekata namijenjeno je tržištu SAD-a, ostali su za hrvatsko i tržišta Europske unije.

“Mnogobrojna znanstvena dostignuća rezultat su već tradicionalno kvalitetne suradnje PLIVE, hrvatskih sveučilišta i drugih znanstvenih institucija, a najčešće upravo s fakultetima s kojima danas potpisujemo Ugovor”, istaknuo je mr. Željko Čović, predsjednik Uprave i glavni operativni direktor PLIVE d. d. te dodao kako je uvjeren da će i ovaj današnji Ugovor o suradnji s četiri zagrebačka fakulteta biti kvalitetan poticaj za intenziviranje suradnje između hrvatskih javnih znanstveno-istraživačkih institucija i uspješnih kompanija u području visoke tehnologije utemeljene na znanju. “Upravo će znanost i inovativnost”, nastavio je mr. Čović, “odigrati ključnu ulogu u daljnjem razvoju nacionalnog gospodarstva i putu Hrvatske prema društvu znanja, naravno, uz još veći angažman i intenzivniju suradnju cjelokupne znanstvene zajednice i gospodarskog sektora.”

U ime dekana tople riječi zahvale domaćinima uputio je prof. Antun Glasnović, dekan FKIT-a, podsjećajući na zajedničku

The official signing of the Agreement was attended by renowned members of the Croatian scientific and academic society, headed by Prof. Dragan Primorac, Minister of Science, Education and Sports of the Republic of Croatia, and Prof. Petar Selem, Chairman of the Education, Science and Culture Committee of the Croatian Parliament, and Prof. Aleksa Bjeliš, Rector of Zagreb University.

On this occasion, PLIVA announced that, by public competition, it would award some forty scholarships to regular students attending their final years of studies in pharmacy, chemistry, chemical engineering and technology, biotechnology, and molecular biology. Students from any Croatian university are eligible to apply. Already during their studies, PLIVA's scholarship students will acquire insight into the practical application of theory to production processes, quality control, laboratory research, and product development. Depending on their affinities and needs, they will be able to choose the field of their internship, graduation thesis or term papers with the help of experts and mentors, while already now, many of them may count on a job at PLIVA.

By merging with Barr, PLIVA's research & development has gained new incentive and momentum. By the end of this year, PLIVA will have 70 new researchers in its employment; the number of projects involving pharmaceutical, analytical, chemical and biotechnological development has grown significantly; more than 50 % of these projects are intended for the American market, while the rest are for the Croatian and EU markets.

“These numerous scientific achievements are the outcome of PLIVA's traditionally excellent collaboration with Croatian universities and other scientific institutions, but most frequently the faculties that are party to this Agreement today,” stressed Mr. Željko Čović, President of the Management Board and CEO of PLIVA d. d. He also added that he is confident that today's collaboration agreement with the four Zagreb faculties will be a worthy incentive to intensify collaboration between Croatia's public scientific-research institutions and successful companies in the field of high technology founded on know-how. “Exactly science and innovativeness”, continued Mr. Čović, “shall play the key role in the further development of our national economy and Croatia's path toward a society of knowledge, in conjunction, of course, with an even greater involvement and more intensive collaboration between the entire scientific community and the economic sector.”



Slika 1 – Domaćini u društvu uzvanika

Slijeva: Zdravka Knežević, Dragan Primorac, Željko Čović i Petar Selem

Fig. 1 – The hosts in the company of guests

From left: Zdravka Knežević, Dragan Primorac, Željko Čović and Petar Selem



Slika 2 – Detalji potpisivanja Sporazuma

Mr. Ž. Čović s: A) A. Glasnovićem, dekanom FKIT-a; B) N. Kujundžićem, dekanom FBF-a; C) I. Weygand-Đurašević, prodekanom za znanost PMF-a; D) D. Ježekom, dekanom PBF-a

Fig. 2 – Highlights from the signing of the Agreement

Mr. Ž. Čović with: A) Prof. A. Glasnović, Dean of the Faculty of Chemical Engineering and Technology; B) Prof. N. Kujundžić, Dean of the Faculty of Pharmacy and Biochemistry; C) Prof. I. Weygand-Đurašević, Assistant Dean for Science of the Faculty of Science; D) Prof. D. Ježek, Dean of the Faculty of Food Technology and Biotechnology



Slika 3 – Poprsje prof. Vladimira Preloga u predvorju PLIVINA Istraživačkog instituta

Poprsje: Bronca, 72 cm; autor: Kuzma Kovačić, akademski slikar, Izrada – Ljevaonica umjetnina Akademije likovnih umjetnosti, Zagreb; Postolje: monolit iz Carrara mramora, 70 (50) × 65 (40) × 125 cm, Dizajn: Darko Manestar, dipl. inž. arh., AREA Projektiranje, Zagreb, Izrada – REZ, Zagreb

Fig. 3 – Bust of Vladimir Prelog in the lobby of the PLIVA Research Institute

Bust: Bronze, 72 cm; Author: Kuzma Kovačić, academic sculptor, Casted by the Art Foundry of the Zagreb Academy of Fine Arts; Base: Carrara marble monolith, 70 (50) × 65 (40) × 125 cm, Design: Darko Manestar, graduate architect, AREA Projektiranje, Zagreb, Prepared by – REZ, Zagreb



povezanost i suradnju još od vremena Preloga i Kaštela (Prilog 2), dok je ministar Primorac pohvalio PLIVINU inicijativu i priložio da povezivanje gospodarstva s obrazovnim i znanstvenim institucijama nema alternative.

Prilog 2

Uspomene na osnutak "Kaštelova" istraživačkog laboratorija 1936. godine*

Dr. inž. Vladimir Prelog

Kad sam u lipnju 1929. godine položio na Kemijsko-inženjerskom odjelu Češke visoke tehničke škole u Pragu doktorski ispit, vladala je u cijelom zapadnom svijetu teška gospodarska kriza. U Čehoslovačkoj je bilo mnogo nezaposlenih kemičara, a ni u Jugoslaviji nije bilo bolje. Bio sam stoga presretan kad mi je inž. Gotthard J. Dřiza, školski drug moga mentora docenta Rudolfa Lukeša, ponudio da osnujemo laboratorij u kojem bismo u malom mjerilu proizvodili kemikalije kojih tada nije bilo na tržištu. Premda sam u tom laboratoriju u kojem sam radio od 1929. do 1935. godine imao prilike baviti se (poslije radnog vremena) vlastitim istraživanjima, živo sam želio namještenje koje bi mi dopustilo da se potpuno posvetim naučnom radu.

Prvi tračak nade, prvi izgledi da bi se to moglo i ostvariti bilo je pismo profesora Ivana Mareka u kojem me 1931. zapitao bih li ga htio 1933. godine kad ode u mirovinu naslijediti na Katedri organske kemije Tehničkog fakulteta u Zagrebu. S oduševljenjem sam mu pozitivno odgovorio. Pregovori o Marekovu nasljedstvu, međutim, nisu prošli tako glatko kako smo to on i ja pretpostavljali. Profesori Tehničkog fakulteta odlučili su da katedru organske kemije neće popuniti profesorom nego samo sveučilišnim docentom. Najprije se nisam htio natjecati za to mjesto, ali sam, po nagovoru profesora Vladimira Njegovana, to ipak učinio. Poslije imenovanja, u siječnju 1935. godine, preuzeo sam Marekove dužnosti – predavanja, laboratorijske vježbe i ispite – nadajući se da ću uz to moći i intenzivno naučno raditi.

U svom mladenačkom oduševljenju nisam uzeo u obzir nekoliko važnih činjenica. U Zavodu koji sam naslijedio nije postojala oprema za preparativni rad na području organske kemije, jer se Marek gotovo isključivo bavio organskom elementarnom analizom. Uopće su u to vrijeme nastava na Tehničkom fakultetu i kemijska praksa bile ponajviše analitičke prirode. Inženjeri kemije su u tvorničkim i državnim laboratorijima analizirali sirovine i produkte proizvodnje; u pogonu ih je bilo vrlo malo. Zbog toga nije bilo poticaja za preparativni rad. Osoblje Zavoda za organsku kemiju sastojalo se od jednog podvornika i jednog administrativnog činovnika, kojega smo dijelili ja i još dva profesora. Ostalih suradnika nije bilo. Moja mjesečna plaća od 2.000 dinara nije dostajala ni za vrlo skroman život.

Bio sam zbog toga dosta potišten kad me posjetio suradnik tvornice "Kaštel" inž. Vladimir Brajković i predložio mi da se sastanem s direktorom i suvlasnikom "Kaštela", dr. Eugenom Ladanyom, te da s njim razgovaram o mogućnosti naučne suradnje. Dr. Ladany je došao u Zagreb iz Mađarske, gdje je surađivao s poznatom tvornicom lijekova Chinoïn, čije je proizvode "Kaštel" konfekcionirao za jugoslavensko tržište.

* Objavljeno 1986. godine u knjižici "50 godina znanstveno-istraživačkog rada u PLIVI; Izdavač: RO PLIVA Istraživački institut; Priredio Dragoljub Konstantinović; Urednici: Vladimir Baković i Zdenko Radman, Zagreb, 1986." str. 5–7.

Prof. Antun Glasnović, Dean of the Faculty of Chemical Engineering and Technology, expressed his warm thanks to the hosts, and reminded of the relations and collaboration since the times of Prelog and Kaštel (Attachment 2). Minister Primorac acknowledged PLIVA's initiative and added that the connection of the economy and educational and scientific institutions has no alternative.

Attachment 2

Memories of the foundation of the Kaštel research laboratory in 1936*

by Vladimir Prelog

The year 1929, when I earned my Ph.D. at the Czech Technical College in Prague, was marked by serious economic crises in all Western economies. There were a lot of unemployed chemists, both in Czechoslovakia and Yugoslavia. That is why I enthusiastically accepted an offer made by Gotthard J. Dřiza, B. Sc., who was a school-mate of my mentor, University lecturer Rudolf Lukeš, to start a laboratory for the production of chemical substances that were not available on the market at the time. I worked in this laboratory from 1929 to 1935 and, although I had the opportunity to use it for my own research in my free time, I longed to find a job in which I would be able to devote all my energy to scientific work.

In 1931, I was encouraged by a letter from Professor Ivan Marek, asking me if I would be willing to take over his position in the Organic Chemistry Department at the Technical College in Zagreb after his retirement in 1933.

I accepted the offer with enthusiasm, although I was soon disappointed by the decision of the Technical College professors to appoint a lecturer and not a professor to the vacated post. I seriously considered declining the offer, when Professor Vladimir Njegovan talked me into accepting it. I was appointed in January 1935, and continued with lectures, laboratory classes and exams, hoping that I would find time for intensive scientific work.

With all my youthful enthusiasm, I did not take into consideration a number of facts. First of all, there was no equipment in the laboratory for preparative work in Organic Chemistry, as Marek mostly concentrated on elementary organic analysis. Chemists working in public and factory laboratories analyzed raw materials and finished products; only a few worked in production plants, and there was no incentive for preparatory work. The staff of the Organic Chemistry Institute consisted of a caretaker and a clerk, whose services I shared with two other professors. There was no other staff. My monthly salary of 2,000 dinars did not suffice to cover the costs of a very modest life style.

I was, therefore, in a depressed state when Vladimir Brajković came and suggested a meeting with Dr. Eugen Ladany, the director and co-owner of Kaštel, who was interested in the possibility of our scientific cooperation. Dr. Ladany had come from Hungary, where he had collaborated with Chinoïn, a well-known producer of pharmaceuticals, whose products were at that time marketed on the Yugoslav market by Kaštel.

Business was good and Dr. Ladany intended to diversify and begin the production of original pharmaceuticals. An effort in this direction had already been made prior to our cooperation with Kaštel. In our garden shed, cardiotonic penthametilentetrazole

* Published in 1986 in the booklet "50 Years of Scientific Research in Pliva; Publisher: RO PLIVA Research Institute; Prepared by Dragoljub Konstantinović; Editors: Vladimir Baković and Zdenko Radman, Zagreb, 1986". p. 5–7.



Slika 4 – Prof. V. Prelog prima Zlatnu plaketu PLIVE

Plaketa je dodijeljena prigodom obilježavanja 75. obljetnice PLIVE, 1996. godine, a uručena je u konzulatu Republike Hrvatske u Zürichu, 6. veljače 1997. Slijeva: Benjamin Tolić, konzul RH u Zürichu, Darko Marinac, član Uprave PLIVE, Vladimir Prelog i Krunoslav Kovačević, pomoćnik direktora Istraživačkog instituta PLIVE

Fig. 4 – Prof. V. Prelog receiving the PLIVA Golden Plaque

The Plaque was awarded on the occasion of the 75th anniversary of PLIVA, in 1996, and delivered at the Croatian Consulate in Zürich on February 1, 1997. From left: Benjamin Tolić, Croatian consul in Zürich, Darko Marinac, PLIVA Board member, Vladimir Prelog and Krunoslav Kovačević, Assistant Director of the PLIVA Research Institute



Slika 5 – Popsrje je otkriveno

Slijeva: Zlatan Prelog, Antun Tucak, Nenad Prelog, Dragan Primorac, Ernest Meštrović, Petar Selem, Zdravka Knežević, Pavao Mildner, Krunoslav Kovačević, Nataša Kuharić, Željko Čović, Aleksa Bjeliš, Marija Kaštelan-Macan, Marko Vuletić, Antun Glasnović, Nikola Kujundžić i Berislav Glunčić

Fig. 5 – The bust is unveiled

From left: Zlatan Prelog, Antun Tucak, Nenad Prelog, Dragan Primorac, Ernest Meštrović, Petar Selem, Zdravka Knežević, Pavao Mildner, Krunoslav Kovačević, Nataša Kuharić, Željko Čović, Aleksa Bjeliš, Marija Kaštelan-Macan, Marko Vuletić, Antun Glasnović, Nikola Kujundžić and Berislav Glunčić



Slika 6 – Autori i domaćin s Prelogovim nećacima

Slijeva: Nenad Prelog, Željko Mačešić, direktor Ljevaonice umjetnina Akademije likovnih umjetnosti, Kuzma Kovačić, autor biste, Miljenko Dumić, znanstveni savjetnik u PLIVI, Darko Manestar, projektant postolja i Zlatan Prelog

Fig. 6 – Authors and host with Prelog's nephews

From left: Prof. Nenad Prelog, Mr. Željko Mačešić, Director of the Art Foundry of the Zagreb Academy of Fine Arts, Prof. Kuzma Kovačić, Bust author, Prof. Miljenko Dumić, scientific advisor, PLIVA, R&D, Darko Manestar, architect, base designer, and Prof. Zlatan Prelog

“Kaštel” je vrlo dobro prosperirao i dr. Ladany je želio proširiti njegov djelokrug time što će proizvoditi vlastite farmaceutske preparate. Mali početak u tom smjeru bio je učinjen već prije moje veze s “Kaštelom”. Laborant Josip je pod krovom u dvorištu u staklenoj aparaturi proizvodio prema jednom (ne bezopasnom!) “Chinoinovom” propisu iz cikloheksanona i natrijumazida kardiotonik pentametilentetrazol. To je zapravo bio prvi zametak sintetske proizvodnje farmaceutskih sirovina današnje PLIVE.*

Dr. Ladany mi je prigodom našeg razgovora ponudio da surađujem s “Kaštelom” na području medicinske kemije. Bio sam svjestan toga da ću tom suradnjom izgubiti velik dio svoje slobode i radnog vremena, ali sam se nadao da ću time ipak riješiti niz problema, ne samo za sebe nego i za svoje buduće suradnike, koje sam trebao. Radi toga sam ponudu prihvatio bez dvoumljenja.

Dogovorili smo se da će “Kaštel” osnovati istraživački laboratorij. Kemijski odjel toga laboratorija bavio bi se postupcima za proizvodnju medicinski interesantnih spojeva, a farmakološki bi ispitivao njihova biološka i terapijska svojstva. “Kaštel” će mi pomoći da opremim Zavod za organsku kemiju na fakultetu, gdje ću se također baviti kemijom medicinski interesantnih spojeva, a što sam ionako uvijek želio. Kratkoročni je cilj bio da izradimo postupke za proizvodnju već poznatih unosnih lijekova, a dugoročni – pronalazak novih originalnih, biološki aktivnih i medicinski interesantnih spojeva.

Moja je prva briga bila da dam tim apstraktnim planovima realan kemijski sadržaj. Godine 1935. je na polju medicinske kemije slavio velike uspjehe Domagkov *Prontosil* (4'-sulphanilamido-2,4-diaminoazobenzol), koji je bio prvo uspješno sredstvo protiv bakterijskih infekcija. Predložio sam stoga da kao kratkoročni cilj naše suradnje kopiramo *Prontosil*, ali na način da ne dođemo u sukob sa svemoćnom njemačkom kemijskom industrijom. U isto mi se vrijeme javio praški đak, inž. Dragutin Kohlbach, sa željom da radi kod mene na svojoj disertaciji. Predložio sam mu da pripravi niz azo-boja srodnih *Prontosilu*. Od njegovih se spojeva dobrim svojstvima odlikovao 4'-sulphanilamido-4-N-piperazil-azo-benzol, pa smo odlučili da ga poslije kratkog ispitivanja proizvodimo za tržište. Kad su prvi koraci u tom smjeru bili poduzeti, pojavio se u literaturi 1936. rad Daniela Boveta i Francoise Nitti iz Pasteurova instituta: u Parizu u kojem su autori pokazali da se *Prontosil* u tijelu sisavaca reduktivno cijepa i da antibakterijsko djelovanje potječe od produkta tog cijepanja – sulphanilamida (polaznog materijala za azo-boje srodne *Prontosilu*!). Kako sulphanilamid nije bio patentima zaštićen, “Kaštel” ga je 1937. godine pod imenom *Streptazol* stavio na tržište u nevjerojatno kratkom roku. Sve dok se nisu pojavili rezistentni sojevi patogenih bakterija *Streptazol* je bio čudo od lijeka. Njegov je enormni uspjeh mnogo pridonio tome da je “Kaštel” pojačao potporu naše naučne suradnje.

Međutim, ni naši ostali planovi nisu mirovali. Trebalo je izraditi prostorije za istraživački laboratorij, opremiti ga i naći kompetentne suradnike. Mladi inž. Viktor Hahn otišao je kao “Kaštelov” stipendist u Pariz, da neko vrijeme radi i doktorira kod profesora

was produced from cyclohexanone and sodium azide, following a Chinoin procedure. The production process was performed by our laboratory technician Josip, using glass equipment (not without risks). This production process can be regarded as the beginning of synthetic pharmaceutical raw materials production in today PLIVA.*

In a meeting with Dr. Ladany, I was offered the chance to work with Kaštel in the field of medicinal chemistry. I was aware of the fact that I would lose a lot of freedom and time if I accepted this offer, but I hoped that I could solve a number of problems, both for myself and my future collaborators.

We agreed that Kaštel would establish a research laboratory, with chemistry department doing research of production procedures for medically interesting compounds and pharmacological department testing their biological and therapeutic properties. Kaštel

would also subsidize the purchase of equipment for the Organic Chemistry Institute at the College, allowing me to fulfil my old ambition of continued research into medically interesting compounds. Our short-term plan was to standardize production procedures for existing successful medicines and our long-term ambition was to discover new biologically active and medically interesting compounds.

My first concern was to transform these abstract plans into a chemically relevant substance. The greatest success in the field of medical chemistry at the time (1935) was *Domagk's Prontosil* (4'-sulphanilamido-2,4-diaminoazobenzene), the first effective cure for bacterial infections. My proposal at the time was to copy *Prontosil* in such a way that conflict with the powerful German chemical industry would be avoided. I was at the same time approached by a Prague student, Dragutin Kohlbach, who wanted to carry out his

doctoral dissertation with me. I suggested him to prepare a series of azo-dyes, similar to *Prontosil*. Among his compounds, 4'-sulphanilamido-4-N-piperazyl-azo-benzene had good qualities and we decided to begin market production after a short trial period. In 1936, as we had already taken the first steps in that direction, we came upon the work of Daniel Bovet and Francoise Nitti from the Institute Pasteur in Paris, where the authors demonstrated that *Prontosil* underwent splitting in the mammal body and that its antibacterial effect came as a product of that splitting – sulphanilamide (a raw material for azo-dyes similar to *Prontosil*!) As there was no patent protection for sulphanilamide, Kaštel marketed it as *Streptazol* in an unbelievably short period of time. *Streptazol* had all the characteristics of a miracle-medicine, until a resistant pathogen bacteria developed. Its enormous success caused Kaštel to increase its subsidies for our scientific work.

In the meantime, we were not neglecting our other fields of activity. We furnished our research laboratory and undertook a search for promising researchers. A young engineer, Viktor Hahn, went on a Kaštel grant to work and earn his Ph.D. with professor Fournieu at the Institute Pasteur in Paris, and Dr. Pavao Stern was sent to specialize in the field of pharmacology with professor von Brück at Vienna University.



* PLIVA je potkraj 2006. postala članicom Barr grupe. Tim je povezivanjem nastala jedna od najvećih generičkih kompanija na svijetu, a zadržavši svoje ime PLIVA je danas središte europskog poslovanja Barr grupe.

* At the end of 2006, PLIVA became member of the Barr Group, currently one of the world's largest generic pharmaceutical companies. Today PLIVA is the center of Barr Group for its business operations in Europe.

‘Fourneaua na Pasteurovu institutu, a dr. Pavao Štern je poslan da specijalizira na području farmakologije kod profesora von Brücke na Univerzitetu u Beču.

U zavodu na fakultetu počeli smo, kao dio dugoročnog plana, sintetizirati nove antimalarike i spazmolitike. Pomagao je pritom niz suradnika, a pridruživali su nam se s raznih strana. Neki su od njih (Eugen Cerkovnikov, Viktor Hahn, Dragutin Kohlbach, Ernest Rajner i Ljubo Trinajstić) prešli u “Kaštelov” istraživački laboratorij. Trojica od tih prvih suradnika postala su poslije rata sveučilišni profesori. Ostali članovi zavoda na fakultetu (Eugen Guštak i Rativoj Seiwert) postali su važni suradnici PLIVE tek poslije moga odlaska iz Zagreba.*

Moja se loša financijska situacija suradnjom s “Kaštelom” bitno poboljšala. To mi je omogućilo da zavod na fakultetu bolje opremim. Nabavili smo pumpu za visoki vakuum, ledenicu i druge aparate koji su nam bitno olakšali rad. Mogao sam, također, putovanjima u inozemstvo proširiti svoj naučni horizont. Godine 1936. posjetio sam u Budimpešti tvornicu “Chinoin” i upoznao interesantne kemičare toga tada mladoga poduzeća. U jesen 1937. godine proveo sam na vlastiti trošak nekoliko mjeseci u laboratoriju profesora Ružičke u Zürichu, što je poslije za mene bilo od presudne važnosti. Godine 1938. prisustvovao sam internacionalnom kemijskom kongresu u Rimu, gdje sam upoznao niz kemičara iz raznih zemalja s kojima sam se ponovo sastao tek poslije rata.

Moja je suradnja s istraživačkim laboratorijem bila prekinuta kad sam 1941. otišao u Švicarsku. “Kaštel” je, međutim, bitno promijenio svoju strukturu i ime, ali je njegov istraživački laboratorij preživio sve političke i socijalne peripetije i razvio se u veliki istraživački institut sa 400 zaposlenih. Bez njega se poduzeće kao što je PLIVA ne da zamisliti. Moja su stalna veza s tim institutom njegovi brojni suradnici koji su povremeno radili u našem laboratoriju u Zürichu. Ponosan sam što sam sudjelovao u osnivanju “Kaštelova” istraživačkog laboratorija koji je bio zametak PLIVINA instituta. Tom Institutu najsrdacnije čestitam na njegovoj pedesetogodišnjici.

* Dr. sc. Rativoj Seiwert bio je prvi direktor PLIVINA Istraživačkog instituta od 1952. do 1962. godine, a dipl. inž. Eugen Guštak bio je njegov nasljednik na tom mjestu od 1962. do 1966.

At the College’s Institute, we started a long-term program aimed at the synthesis of new antimalarics and spasmolytics. We had a number of valuable colleagues working on the project and some of them (Eugen Cerkovnikov, Viktor Hahn, Dragutin Kohlbach, Ernest Rajner and Ljubo Trinajstić) came to work at the Kaštel research laboratory. Three of these later became University professors. Other members of the College Institute team (Eugen Guštak and Rativoj Seiwert) became outstanding PLIVA associates after I left Zagreb.*

My poor financial status underwent a change for the better due to my work with Kaštel, enabling me to invest in new equipment needed by the College Institute. We purchased a vacuum pump, freezer and other equipment to improve our work. I travelled extensively to improve my knowledge and learn about new research. I was in Budapest in 1936 on a visit to Chinoin, where I met a number of interesting young chemists. In 1937, I spent a number of months at Professor Ružička’s laboratory in Zürich, Switzerland. This proved to be of great importance for my future development. In 1938, I attended the International Chemistry Congress in Rome, where I met numerous chemists from various countries, whom I was to meet again only after the war.

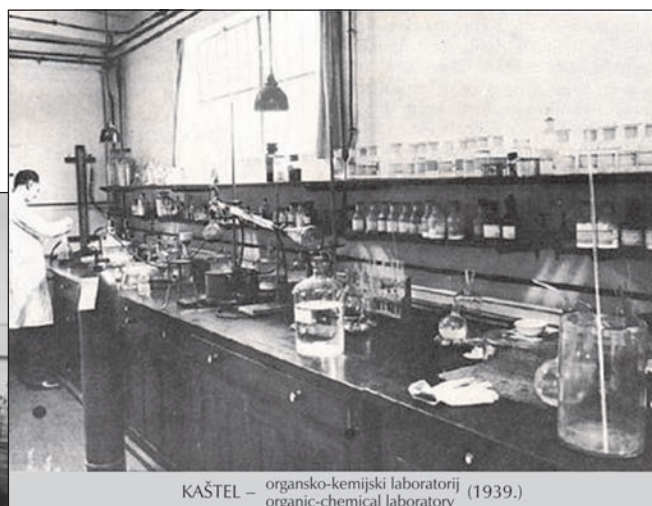
My cooperation with the research laboratory came to an end in 1941, when I left for Switzerland. Kaštel was transformed and renamed after that, but its research laboratory survived all political and social difficulties and became an important Research Institute with 400 employees. It would be difficult to imagine a large company like PLIVA without it. I have been in constant contact with the PLIVA Institute through all the researchers who have come to work in our laboratory in Zürich. I am proud to have been involved in the founding of the Kaštel research laboratory, the nucleus of PLIVA’s Research Institute of today. I would like to congratulate it on its anniversary most cordially.

* Rativoj Seiwert, Ph. D., was the first director of the PLIVA Research Institute from 1952 to 1962, while his successor, Eugen Guštak, was director from 1962



Tvornica
Kaštel a.d.

Farmakološki laboratorij
Pharmacological laboratory



KAŠTEL – organsko-kemijski laboratorij (1939.)
organic-chemical laboratory

U nastavku svečanosti, u predvorju Istraživačkog instituta, u prisutnosti predstavnika obitelji, otkriveno je poprsje prof. dr. Vladimira Preloga, hrvatskog nobelovca i utemeljitelja istraživanja i razvoja u PLIVI, rad akademskog kipara Kuzme Kovačića. PLIVA je svoju zahvalnost ovom nobelovcu izrazila dodjeljivanjem zlatne plakete prigodom obilježavanja svoje 75. obljetnice, 1996. godine, a već više od deset godina PLIVA zajedno s Hrvatskim kemijskim društvom mladim organskim kemičarima dodjeljuje Nagradu Vladimir Prelog (Prilog 3).

The ceremony continued in the lobby of the Research Institute, in the presence of family representatives, with the unveiling of the bust of Prof. Ph. D. Vladimir Prelog, Croatian Nobel Laureate and founder of PLIVA's Research & Development. The bust is the work of Croatian academic sculptor Kuzma Kovačić. PLIVA expressed its gratitude toward this Nobel Prize winner by awarding a golden plaque on the occasion of its 75th anniversary in 1996, while for more than ten years, PLIVA and the Croatian Chemical Society have been jointly awarding the Vladimir Prelog Prize to young organic chemists (Attachment 3).

Prilog 3

Attachment 3

Dosadašnji dobitnici Nagrade "Vladimir Prelog" mladom organskom kemičaru
Winners of the Vladimir Prelog Prize for young organic chemists

- Mirjana Gelo 1996.
- Amir Avdagić 1997.
- Goran Kragol 1998.
- Valerije Vrčec 1999.
- Linda Tomašković 2001.
- Ivo Piantanida 2002.
- Nikola Basarić 2004.
- Marin Roje 2006.

Nagradu zajednički dodjeljuju PLIVA i Hrvatsko kemijsko društvo
The prize is jointly awarded by PLIVA and the Croatian Chemical Society

Poprsje je otkrio jedan od posljednjih Prelogovih postdoktoranada, prof. Miljenko Dumić, koji je tom prigodom sjetno govorio o prof. Prelogu (Prilog 4), dok je osvrtno na živu i meku Kuzminu modelaciju znamenitog znanstvenika izabranim riječima ocrtao prof. Milan Bešlić (Prilog 5).

The bust was unveiled by one of Prelog's last postdoctoral students, Prof. Miljenko Dumić, speaking of Prof. Prelog melancholically (Attachment 4). The soft and lively portrayal of our renowned scientist, created by Kuzma Kovačić, was outlined briefly by Prof. Milan Bešlić (Attachment 5).

Prilog 4

Attachment 4

Zagreb, 3. listopada 2007.

Poštovana obitelji našeg Profesora, dragi uzvanici i gosti, kolegice i kolege

Danas se, na krilima umjetnosti, vratio u naš Institut **Vladimir Prelog**. Što prigodno reći o njemu, nobelovcu, jednom od najvećih kemičara dvadesetog stoljeća, "Kralju kemije" (Barry Sharpless), učitelju generacija hrvatskih kemičara, hrvatskom domoljubi i našem utemeljitelju? Što reći o znanstveniku velika morala, fascinantnom pedagogu, vrhunskom intelektualcu i esteti?

Prelog je bio zaljubljenik u kemiju, koja mu nije bila samo struka nego i životna filozofija. Smatrao je da je ona "dio naše kulture jednako kao duhovne znanosti i umjetnosti, jer nas uči i upoznaje s promjenama stvari koje su neizbježni dio svega što se zbiva u nama i oko nas, a za razliku od ostalih prirodnih i duhovnih znanosti, slična je umjetnosti, jer sama proizvodi predmete svoga rada."

Prožet stvaralačkim duhom, Prelog je cijeloga života tiho i nenametljivo radio i premošćivao provaliju između tradicionalne i moderne škole kemije, promičući akademske slobode, ali i odgovornost istraživača. Smatrao je da su za uspehe u poslu, naravno, pored talenta, zaslužni i dobri učitelji i suradnici, razumijevanje sredine, ali i suvremene teme s jasno definiranim kratkoročnim, ali i dugoročnim ciljevima i taktikama njihova ostvarenja te timskim radom. Isticao je da je to naročito važno za suradnju s industrijom, "koja je i u današnje vrijeme rijetko kupljena lutrija. Priželjkuju je, ali i boje je se obje strane. Žele dobitak, ali ne žele platiti sreću."

Zagreb, October 3, 2007

Dear family members of our Professor, dear guests and colleagues,

Today, on the wings of art, Vladimir Prelog, has returned to our Institute. What is there to say on this occasion about this Nobel Prize winner, one of the foremost chemists of the 20th Century, "King of Chemistry" (Barry Sharpless), teacher of generations of Croatian chemists, a Croatian patriot, and our founder? What is there to say about this scientist of huge morale, a fascinating educator, superior intellectual, and aesthete?

Prelog was devoted to chemistry, which was not only his vocation but also his life philosophy. He considered chemistry "equally part of our culture, as spiritual science and the arts, because it gives us insight into the changes of the matter that we and our surroundings are made of, and unlike other natural or spiritual sciences, it is similar to art because chemistry itself produces the objects of its work."

Full of creative spirit, Prelog worked quietly and discreetly all his life, bridging the gap between the traditional and modern school of chemistry, promoting academic liberties, but also the responsibility of the scientist. He believed that success in the profession, apart from talent, also required good teachers and assistants, the understanding of the social environment, but also modern topics with clearly defined short and long-term goals and strategies toward their attainment, as well as teamwork. He emphasized this as highly important for co-operation with the industry, "which even today is like a rarely bought lottery ticket. Both sides want it, but fear it. They want to win, but are reluctant to buy the lottery ticket".

Premda se “*Prelogov kotač istraživanja*” počeo kotrljati još u Pragu, pun je zamah dobio tek za njegove profesure u Zagrebu. Suradnjom s malom farmaceutskom tvrtkom *Kaštel d.d.* Prelog je u njoj postavio temelje organiziranoga znanstvenoga rada, što je bio zametak Istraživačkoga instituta i sintetske proizvodnje u današnjoj PLIVI. To je svijetom s ponosom isticao. Iako je njegovim odlaskom u Zürich taj rad bio prekinut, u nepunih je sedam godina uspio svoje suradnike naučiti znanosti, umijeću i umjetnosti organske sinteze te stvoriti svoju, ***Prelogovu školu organske kemije u Zagrebu*** i učiniti je prepoznatljivom u znanstvenom svijetu.

Kasnijih godina, praktički sve do svojih posljednjih dana, osobnim je stipendijama omogućio brojnim hrvatskim mladim organskim kemičarima, a prvenstveno onima iz PLIVE, doktorske i postdoktorske specijalizacije u svojem laboratoriju na ETH-u. Većina se od njih vratila u Hrvatsku, a zauzimajući istaknuta mjesta u PLIVI i Sveučilištu, prenosili su tako nauk svojega učitelja i podizali razinu hrvatske znanstvene izvrsnosti. Oni su svjedoci Prelogove predanosti znanstvenom radu, ali i želje da u našu sredinu diseminira moderna znanja i suvremene znanstvene teme. Slobodno se može kazati da se zahvaljujući Prelogu, organska kemija u Hrvata razvila u svjetski prepoznatljivu disciplinu, barem deset godina prije ostalih znanosti.

Prelogovi su suradnici osjetili njegovu dobrotu i poticaj u radu, osjetili i prihvatili iskrnu strasti u duhu, koju je on palio za istraživanje i zapamtili njegov blagi humor. Volio ih je pohvaliti i nagraditi, jer je smatrao da su nagrade “*predah, poticaj i potvrda da se mora i može nastaviti dalje.*” Bio je tolerantan prema svima, ali nije trpio militantne revnosnike svake vrste. Zato je početkom Domovinskog rata digao svoj glas protiv zvjerstava i barbarstva, potpisujući među prvima apel nobelovaca za mir. Potresen ratnim strahotama, u osobnim je kontaktima, ali i u javnim medijima glasno protestirao: “*Korijeni zla duboki su i složeni. Ognjišta mržnje ne prestaju se paliti svuda u svijetu. Tko će ih ugasiti? Očekujem onoga tko će donijeti vijest o neodoljivom miru.*” Jednostavan, jasan i dostojanstven nije davao povoda za bilo kakvo daljnje suprotstavljanje. Sa sigurnošću izraza osvajaio je sugovornika. Osvojio je i mene, potpuno i bez ostatka.

Naš utemeljitelj, usudujem se reći umjetnik kemičar, naš Vlado, vratio se danas u PLIVIN Institut, u našu sredinu iz koje je otišao davne 1941., ali koju, za sve vrijeme izbjivanja, nije napustio, niti zaboravio. Vratio se ovjekovječen profinjeno profiliranom bistom umjetnika Kuzme Kovačića i ostao tu kao simbol zajedničkih stremljenja, ostvarenih uspjeha i podstreka mladim istraživačima.

Miljenko Dumić

“*Prelog’s wheel of research*” started turning in Prague, however, it only gained full momentum during his professorship in Zagreb. Collaborating with the small pharmaceutical factory *Kaštel d.d.*, Prelog laid the foundations of its scientific research, which was the seed of today’s Research and Development Department of PLIVA. He proudly made this known all over the world. Although this work was discontinued with his moving to Zurich, during those seven years he succeeded in teaching his assistants the skills and artistry of organic synthesis as well as founded his own ***Prelog School of Organic Chemistry in Zagreb***, duly recognized in the scientific world.

In later years, almost to his last days, he personally supported by scholarships numerous young Croatian organic chemists, primarily from PLIVA, to perform their doctoral and postdoctoral specializations at his ETH laboratory. Most of them returned to Croatia, and by gaining leading positions at PLIVA and the University, they transferred the teachings of their professor and thus raised the level of Croatia’s scientific excellence. They are the witnesses of Prelog’s devotion to scientific research, but also his desire to disseminate modern know-how and scientific topics to our society. We may freely say that, thanks to Prelog, organic chemistry of Croatia had developed into a globally recognized discipline at least ten years before any other science.

Prelog’s assistants sensed his integrity and stimulus in his work, they sensed and accepted the spark of passion that burned in him during research, and they remembered his mild humor. He liked to praise and reward his students, because he believed a reward to be “*a pause, a motive, and an encouragement that they must and can go further.*” He was tolerant of everyone, but he could not stand ardent militants of any kind. Thus, at the beginning of the Homeland War, he raised his voice against the cruelty and barbarism by signing the Nobel Laureates’ Appeal for Peace. Shocked with the atrocities, he protested both in personal contacts and in the media: “*The roots of evil are profound and complex. The hearths of hatred are lighting up incessantly everywhere in the world. Who shall quench them? I am waiting for someone to bring the news of irresistible peace.*” Straightforward, explicit and dignified, he never gave rise to any further confrontation. He always fascinated his interlocutors with his confident expression. He fascinated me as well, completely.

Our founder, I dare say *chemistry artist*, our Vlado, has returned today within our midst, to the PLIVA Institute, from where he left back in 1941, but which he had never abandoned or forgotten. He has returned today, immortalized in the finely profiled bust by artist Kuzma Kovačić, and will remain here as a symbol of the common pursuits, success, and inspiration to our young scientists.

Miljenko Dumić

Prilog 5

Kovačićev portret hrvatskog nobelovca Vladimira Preloga

“Izraz, kao određeni pojam u teoriji umjetnosti, podrazumijeva neku duhovnu osnovu, onaj izvor iz kojega vode mogu poteći, iz kojega djelo može biti stvarno.” U ovim riječima Kuzme Kovačića (rođen u Hvaru 1952.) možemo tražiti ishodište njegovom stvaralaštvu i, dakako, u njima iščitavamo kiparevo intelektualno stajalište i, gotovo bismo mogli reći, umjetničko uvjerenje na kojemu je izgrađivao svoje djelo. Kad kažemo da možemo tražiti kiparevo uporište i ishodište, tada tek otvaramo mnoga, ali i temeljna pitanja koja determiniraju i sam stvaralački čin. A prvo među njima nameće se već u prvoj rečenici, jer nam u njoj kipar govori da za stvaranje svojih djela treba “duhovnu osnovu”. A možemo li tu “duhovnu osnovu” tražiti u njegovu stvaralačkom sazrijevanju i umjetničkom svladavanju potrebnih znanja i umijeća stjecanih za petogodišnjeg studija (1971.–1976.) na zagrebačkoj Akademiji likovnih umjetnosti? Ili pak u mediteranskom ozračju kipareva zavi-

Attachment 5

Kovačić’s portrait of Vladimir Prelog, Croatian Nobel Laureate

“Expression, as a specific term in art theory, implies a certain spiritual basis, a spring from which water may flow, a life source of an art piece.” It is in these words of Kuzma Kovačić (born in Hvar, 1952), that we may seek the origins of his work, and indeed, interpret the sculptor’s intellectual point of view, as well as his artistic convictions upon which he developed his work of art. When saying that we may seek the foothold and origins of his work, then we are opening numerous but also basic questions that determine the act of creation itself. The first among them already suggests itself in the first sentence, where the sculptor says he requires a “spiritual basis” for his work. Hence, may we seek this “spiritual basis” in the period of his creative development and artistic mastering of the required skills during his five-year studies (1971–1976) at the Zagreb Academy of Fine Arts? Or perhaps in the Mediterranean ambience of the sculptor’s hometown and island

čajnoga grada i otoka Hvara, tako snažno prožetoga antičkim naslijeđem te, napose, golemom kršćanskom tradicijom kao duhovnom i religioznom vrijednošću impliciranom u povijest i svakodnevicu. Pomišljamo i na umjetnička djela stvarana rukom velikih kipara koji su obilježili povijest, dakako i na ona što su utjecala na suvremenu umjetnost. Dakle, na djela na kojima se formirala i sazrijevala Kovačićeva svijest o dubokoj potrebi za izgrađivanjem odnosa s baštinom, kao i suvremenim umjetničkim ostvarenjima oblikujući njegov izraz kao autentični čin "iz kojega djelo može biti stvoreno." A taj se stvaralački čin iščitava u akceptiranju i asimilaciji upravo tih tradicijskih vrijednosti kiparstva i njegovih suvremenih inačica u inventivnoj koncepciji i znalački modeliranoj formi kojom Kovačić stvara likovno prepoznatljiv i oseujan izraz. Međutim, ta umjetnikova iskustva i kreativne dosegse ne prepoznajemo samo u kiparevim djelima već i u njegovom pedagoškom radu (od 1996. godine) na Umjetničkoj akademiji u Splitu prenoseći ih studentima kao temeljne premise i za njihova umjetnička ostvarenja.

Također, kad govorimo o tim Kovačićevim djelima izgrađenim na sintezi tradicijskih i suvremenih kiparskih vrijednosti, tada u nedvojbeno vještom i znalačkom komponiranju forme u različitim materijalima iščitavamo i taj nedvojbeno snažan kiparev izraz kojim je oblikovao svoja brojna djela. Bilo ona koja su širila njegov duhovni obzor u slobodnim i apstraktnim formama ili pak drugačijim, u kojima je ta ista stvaralačka snaga sažimala elemente figuralnog predloška u isti izraz autorski prepoznatljiv u obje inačice.

U poprsju Vladimira Preloga (bronca, 72 cm) kipar je, na tragu svojega višegodišnjega iskustva, koncipirao formu s nedvojbenim portretnim značajkama. Živom i mekom modelacijom znalački je izrazio osobnost znamenitog hrvatskoga znanstvenika sažimajući formu puninom plastične cjelovitosti u kiparsko djelo. Čistoćom linije i iznimnom vještinom dinamizira površinu forme modeliranu također čvrstom gestom u kojoj i prepoznajemo taj oseujan – kovačićevski izraz.

Milan Bešlić

of Hvar, so full of antique heritage, and with a huge Christian tradition of spiritual and religious value involved in its history and everyday life. Works of art crafted by the great sculptors that marked history also come to mind, as do those that influenced modern art. Namely, the works of art upon which Kovačić formed and developed his awareness of the profound need to build a relationship between heritage and modern artistic achievements by shaping his expression as a genuine act "from which the art piece is created." And that act of creation is reflected by the acceptance and assimilation of precisely these traditional sculpting values and their modern forms into the inventive concept and the skillfully modeled form by which Kovačić creates his recognizable and distinctive expression. However, not only do we recognize this artist's experience and creative achievements in his works of art, but also in his work as teacher (since 1996) at the Split Academy of Art, where he conveys his basic principles to his students for the benefit of their future artistic achievements.

Furthermore, when we consider Kovačić's works of art, built upon merging traditional and modern sculpting values, we may then, in the masterly composed forms in various materials, also interpret his strong expression by which he shaped his many works of art. Whether they are those that spread his spiritual horizon in free and abstract shape, or perhaps those in which that same creative strength encapsulates elements of a figural pattern into the same expression, recognizable in both forms. In the bust of Vladimir Prelog (bronze, 72 cm) the sculptor, drawing on his several-year experience, conceived a form with undoubtedly portrait-like characteristics. He skillfully expresses the character of the renowned Croatian scientist, encapsulating the form with the fullness of its plasticity into a work of art. The clean-cut lines and his exceptional talent give life to the face, also modeled with the strong gesture typical of that distinctive Kovačić expression.

Milan Bešlić

Tako je cjelokupan, obrazovanju i znanosti usmjeren događaj, nadopunjen kulturnim ugođajem, zaista bio na razini "istraživačke Lige prvaka".

Miljenko Dumić
PLIVA Hrvatske d. o. o.
Istraživanje i razvoj

Thus, the entire educational and scientific event, complemented with a cultural event, was indeed at the level of a "researchers' champions league".

Miljenko Dumić
PLIVA Croatia, Ltd.
Research and Development

STOTA OBLJETNICA ROĐENJA VLADIMIRA PRELOGA

Milenijska fotografija

Pozivu Organizacijskoga odbora za obilježavanje 100-te obljetnice rođenja Vladimira Preloga na snimanje milenijske fotografije odazvalo se dvjestotinjak kemičara i kemijskih inženjera među kojima je bilo akademika, ravnatelja znanstvenih instituta, dekana, sveučilišnih profesora i ostalih nastavnika, istaknutih hrvatskih znanstvenika i gospodarstvenika te znanstvenih novaka i studenata. Svi su oni došli da bi još jednom počastili velikoga učitelja hrvatskih kemičara i trajno zabilježili zajedništvo i snagu ujedinjene kemije i kemijskoga inženjerstva.

Snimanje je u ponedjeljak, 12. studenoga u 14 sati obavio poznati snimatelj Šime Strikomani, koji je sudionike maštovito smjestio u siluetu kemičarima znanoga Prelogova profila koji krase i sve edicije posvećene našem nobelovcu u povodu njegova velikoga jubileja.

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