

Na osnovu člana 129. Statuta Univerziteta u Beogradu i članova 141 – 143. Statuta Univerzitet u Beogradu – Fakulteta za fizičku hemiju, a po izveštaju Komisije referenata, br. 940/1 od 21.12.2009. godine, Izorno veće Fakulteta, na III redovnoj sednici, održanoj 14.01.2010. godine, donosi sledeću

O D L U K U

1.- Utvrđuje se predlog za izbor **dr Slobodana Macure** u zvanje **gostujući profesor**, za učešće u nastavi na predmetima poslediplomskih studija iz oblasti nuklearne magnetne rezonancije, na Fakultetu za fizičku hemiju.

2.- Ova odluka se dostavlja Senatu Univerziteta u Beogradu radi donošenja odluke o izboru.

Odluku dostaviti:

- Senatu Univerziteta
u Beogradu,
- Arhivi Fakulteta.

D e k a n
Fakulteta za fizičku hemiju

Prof. dr Šćepan Miljanić

Na sednici Izbornog veća Fakulteta za fizičku hemiju od 12. 11. 2009. godine određeni smo u komisiju za podnošenje referata za izbor Dr Slobodana Macure, profesora biohemije na Poslediplomskoj školi Mejo fondacije (Ročester, Minesota, SAD) za izbor u zvanje gostujućeg profesora, za učešće u nastavi na predmetima poslediplomskih studija a iz oblasti Nuklearne magnetne resonancije, o čemu podnosimo sledeći,

IZVEŠTAJ

A. Biografski podaci

Slobodan Macura je rođen 1948. u Stanišiću (AP Vojvodina). Osnovnu i srednju (Hemijsko tehnološku tehničku školu) završio je u Beogradu a diplomirao 1972. godine na grupi za Fizičku hemiju Prirodno-matematičkog fakulteta u Beogradu .Na istoj grupi odbranio doktorat iz fizičke hemije 1978.godine i time stekao titulu doktora fizičkohemijskih nauka. Školsku 1979/1980 kao stipendista Republičke zajednice za nauku SR Srbije provodi u Laboratoriji za fizičku hemiju (ETH, Ciri, Švajcarska) u grupi profesora Ričarda Ernsta (Nobelova nagrada za hemiju 1992.) a 1980/1981 kao stipendista ETH u Institutu za biofiziku i molekularnu Biologiju (ETH, Ciri) u grupi profesora Kurta Vitriha (Nobelova nagrada za hemiju, 2002.). U periodu 1981-1990 gostovao u Mičigenskom institutu za makromolekule (Midland, Mičigen, SAD), Institutu za ispitivanje molekula od biološkog interesa (Napulj, Italija), Istraživačkoj školi za hemiju Australijskog nacionalnog univerziteta (Kanbera, Australija), Odseku za biohemiju Viskonsinskog univerziteta (Medison, Viskonsin, SAD) i Odseku za Hemiju Napuljskog Univerziteta (Napulj, Italija). Bavi se nuklearno magnetno rezonantnom spektroskopijom i njenom primenom u određivanju trodimenzionalne strukture bioloških makromolekula u rastvoru.

Od 1972. do 1974. radio u Odeljenju za opštu i fizičku hemiju Instituta za hemiju tehnologiju i metalurgiju u Beogradu, kao mlađi istraživač, a od 1974. u Institutu za fizičku hemiju Odseka za hemijske i fizičkohemijske nauke Prirodno-matematičkog fakulteta, kao asistent. Godine 1981. unapredjen u zvanje Naučnog saradnika, 1985. u zvanje Docenta i 1989. u zvanje Vanrednog profesora, Univerziteta u Beogradu. Predavao je Atomistiku studentima Fizičke hemije. Trenutno je profesor biohemije u Poslediplomskoj školi Mejo fondacije (Ročester, Minesota, SAD), konsultant na Mejo klinici i direktor Laboratorije za analitičku nuklearnu magnetnu rezonanciju Mejo fondacije. Član je Srpskog hemijskog društva, Društva fizikohemičara Srbije, Američkog hemijskog društva, Američkog fizičkog društva, Američkog društva za unapredjenje nauke (AAAS), Proteinskog društva, Medjunarodnog društva za magnetnu rezonanciju (ISMAR), i Društva za primenu magnetne rezonancije u medicini (SMRM). Dopisni član SANU od 2000.g. Objavio je preko 150 radova u naučnim časopisima.

B. Disertacije

1. Doktorska disertacija, 1978., Univerzitet u Beogradu , Odsek za hemijske i fizičko hemijske nauke, PMF-a: Fenomenološko opisivanje suženja NMR linije usled kretanja u višefaznim sistemima.

C. Nastavna delatnost

U toku rada na Univerzitetu u Beogradu, na Odseku za hemijske i fizičkohemijske nauke S. Macura je držao vežbe iz Opšteg kursa fizičke hemije za hemičare, fizičare, fizikohemičare i molekularne biologe, zatim iz Fizičke hemije čvrstog stanja, Fizičke hemije makromolekula i Atomistike, a držao predavanja iz predmeta Fizička hemija bioloških sistema i Atomistika. Trenutno je profesor biohemije u Poslediplomskoj školi Mejo fondacije (Ročester, Minesota, SAD).

Profesor Macura je rukovodio izradom 3 doktorska rada a brojni studenti i saradnici Fakulteta

za fizičku hemiju i drugih naših fakulteta bili su na usavršavanju u njegovoj laboratoriji.

D. Udžbenici

Koautor je dva srednjoškolska i jednog univerzitetskog udžbenika:

S. Macura, J. Radić-Perić, *ATOMISTIKA*,

Prvo izdanje FFH, 1994. 503 str.

Drugo prošireno izdanje, Službeni list, Beograd, 2004. 619 str.

E. Naučno-istraživačka delatnost

Prikaz radova

Skoro celokupna naučna aktivnost profesora S. Macure usredsređena je na razvoj metoda i primenu nuklearne magnetne rezonancije (NMR) u fizičko-hemijskim i biološkim sistemima: NMR u čvrstom stanju, NMR u tečnostima, ispitivanje bioloških sistema, određivanje strukture prirodnih proizvoda, prostorno lokalizovana NMR spektroskopija, razvoj metoda NMR spektroskopije visokog razlaganja i dvodimenzionalna (2D) spektroskopija izmene. Po obimu radovi se kreću od kratkih saopštenja do opsežnih studija, po sadržaju od teorijskih do primenjenih, a po profilu časopisa od fizičkih, preko hemijskih i bioloških do medicinskih. Najveći broj radova, međutim, odnosi se na razvoj novih NMR metoda gde je pored detaljnog teorijskog opisa svaka metoda i eksperimentalno potvrđena.

1. NMR u čvrstom stanju

U ovoj grupi radova pomoću NMR spektroskopije i NMR relaksacije ispitivane su osobine jona i molekula u sorpcionim sistemima.

2. 2D spektroskopija izmene

Najznačajniji doprinos profesora Macure je u oblasti 2D spektroskopije izmene. Ova metoda danas ima istaknuto mesto u hemiji i strukturnoj biologiji.

3. Nove metode NMR spektroskopije

Profesor Macura se bavi 2D NMR spektroskopijom od najranijih dana njenog nastanka, pa je, pored 2D spektroskopije izmene, znatan broj radova posvećen razvoju drugih 2D metoda: za dobijanje NMR spektara makromolekula, za obradu 2D spektara, za određivanje orijentacije liganda koji se vezuje za paramagnetni protein itd.

4. NMR u biološkim sistemima

Primenom NMR spektroskopije u biološkim sistemima profesor Macura se bavi preko dvadeset godina. U ranoj fazi ispitivao je mogućnosti za primenu relaksacionih vremena vode za karakterizaciju malignih ćelija i za ispitivanje permeabilnosti ćelijskih membrana. Kasnije, NMR spektroskopijom visokog razlaganja ispitivao je vezivanje gama amino buterne kiseline na sinaptičkim membranama i određivao koncentraciju mlečne kiseline u ekstraktima mozga glodara. NMR spektroskopija visokog razlaganja na jezgrima fosfora-31 i fluora-19 korišćena je za praćenje koncentracije metabolita *in vitro* u kulturama ćelija raka zatim određivanje strukture malih biološki aktivnih molekula, fragmenata DNK, peptida i proteina kao i ispitivanje interakcije peptida i proteina sa ligandima i vodom.

5. NMR određivanje strukture prirodnih proizvoda

U saradnji sa kolegama sa Hemijskog fakulteta, koristeći metode 2D NMR spektroskopije, a pre svega NOESY metodu, profesor Macura je odredio strukturu nekoliko desetina prirodnih proizvoda ekstrahovanih iz domaćih biljnih vrsta.

6. Zapreminski selektivna NMR spektroskopija

Nuklearna magnetna rezonancija je odavno prodrla u medicinu kao nezamenljiva dijagnostička metoda -- magnetna rezonancija. Profesor Macura je predložio originalnu metodu, CARVE (Completely Arbitrary Regional Volume Ecitation), za dobijanje NMR spektara iz regiona proizvoljnog oblika.

7. NMR u tečnom stanju

Istraživačka aktivnost profesora Macure proteže se od jednostavne primene NMR spektroskopije za kvantitativnu analizu (7) preko određivanja strukture malih molekula u rastvoru i dimerizacije malih molekula do ispitivanja medjumolekulskih vodoničnih veza.

Najvažniji naučni radovi profesora Macure odnose se na razvoj i primenu metoda 2D NMR spektroskopije izmene, koje su se u međuvremenu pokazale nezamenljivim pri određivanju struktura molekula u rastvoru i ispitivanju dinamike ravnotežnih sistema. Radovi iz ove grupe citirani su u svetskoj literaturi preko 4500 puta i u više od 25 monografija. Pri tome je rad o kros-relaksaciji u tečnom stanju dostigao rang klasičnog citata (citation classics) jer je citiran preko 1000 puta (1370).

E. Zaključci i preporuke komisije

Iz izloženog se vidi da Prof. Slobodan Macura ima 160 radova koji su mahom publikovani u vodećim međunarodnim časopisima. Radovi su citirani u svetskoj literaturi preko 4700 puta pri tome jedan preko 1000 puta (citation classics). Radovi su citirani u više od 25 monografija. Održao je brojna plenarna predavanja i predavanja po pozivu. Predavao je na više Univerziteta, koautor je univerzitetskog udžbenika. Stoga sa zadovoljstvom predlažemo Nastavno-naučnom veću Fakulteta za fizičku hemiju da Prof. Slobodana Macuru izabere u zvanje gostujućeg profesora.

KOMISIJA REFERNATA

1. dr Vera Dondur, redovni profesor
2. dr Miljenko Perić, redovni profesor
3. dr Goran Bačić, redovni profesor

PRILOG

Detaljni biografski i bibliografski podaci o prof. Slobodanu Macuri

Curriculum Vitae and Bibliography

Slobodan I. Macura, PhD

PERSONAL INFORMATION

Work Address: Mayo Clinic
NMR Facility, Gu C 009 B, 200 First Street SW
Rochester, MN 55905
507-284-5917

PRESENT ACADEMIC RANK AND POSITION

Director - Nuclear Magnetic Resonance Facility, Department of Biochemistry and Molecular Biology, Mayo Clinic, Rochester, Minnesota	1990 - Present
Full Faculty Privileges in Biochemistry and Molecular Biology - Mayo Graduate School	09/30/1992 - Present
Consultant - Department of Biochemistry and Molecular Biology, Mayo Clinic, Rochester, Minnesota	10/11/1993 - Present
Professor of Biochemistry and Molecular Biology - College of Medicine, Mayo Clinic	07/01/1999 - Present
Full Faculty Privileges in Biomedical Engineering - Mayo Graduate School	12/08/1999 - Present

EDUCATION

University of Belgrade, Yugoslavia BSc, Physical Chemistry	1972
University of Belgrade, Yugoslavia PhD, Physical Chemistry	1978

MILITARY SERVICE

Yugoslavian Army	1975
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PREVIOUS PROFESSIONAL POSITIONS AND MAJOR APPOINTMENTS

Research Assistant - Institution of Chemistry Technology and Metallurgy, Belgrade, Yugoslavia	1972 - 1974
Teaching Assistant - Department of Chemistry and Physical Chemistry, University of Belgrade, Yugoslavia, Belgrade, Yugoslavia	1974 - 1979
Postdoctoral Fellow - Eidgenossische Technische Hochschule, Switzerland, Zurich, Switzerland	1979 - 1980

Research Associate - Institute for Molecular Biology, Eidgenossische Technische Hochschule, Switzerland, Zurich, Switzerland	1980 - 1981
Research Associate - Department of Chemistry and Physical Chemistry, University of Belgrade, Yugoslavia, Belgrade, Yugoslavia	1981 - 1985
Assistant Professor - Department of Chemistry and Physical Chemistry, University of Belgrade, Yugoslavia, Belgrade, Yugoslavia	1985 - 1989
Associate Professor - Department of Chemistry and Physical Chemistry, University of Belgrade, Yugoslavia, Belgrade, Yugoslavia	1989 - 1990
Associate Professor of Biochemistry and Molecular Biology - College of Medicine, Mayo Clinic	01/01/1991 - 07/01/1999

PROFESSIONAL & COMMUNITY MEMBERSHIPS, SOCIETIES AND SERVICES (*indicates office held)

Professional Memberships & Services

American Association for the Advancement of Science

American Chemical Society

American Physical Society

International Society for Magnetic Resonance in Medicine

Protein Society

Society of Magnetic Resonance in Medicine

Yugoslavia

University of Belgrade

Institute of Physical Chemists

*Deputy Director 1986 - 1989

School of Chemistry and Physical Chemistry

*Council Member 1982 - 1984

*Council Member 1989 - 1990

Graduate Subcommittee

Research Subcommittee

Undergraduate Curriculum Subcommittee

EDUCATIONAL ACTIVITIES

Curriculum/Course Development

BSB 8005, Physical Biochemistry - NMR Course Director Mayo Graduate School Rochester, Minnesota	1994 - 2004
BSB 8675, Protein Structure and Dynamics Course Co-director Mayo Graduate School Rochester, Minnesota	2003

Teaching

Molecular Biophysics Mayo Graduate School Rochester, Minnesota	
NMR Spectroscopy Graduate, one semester course, 2 hours/week, Dept. of Physical Chemistry University of Belgrade Belgrade, Yugoslavia	
The study of structure and dynamics of (macro)molecules by 2D NMR spectroscopy Seminar - Solid State Physics, Dept. of Physics Institut J. Stefan Ljubljana, Slovenia	1982
The study of structure and dynamics of (macro)molecules by 2D NMR spectroscopy MMI Research Seminar Michigan Molecular Institute Midland, Michigan	1982
Principles of 2D NMR spectroscopy Seminar - Modern Physics, Dept. of Physics University E. Kardelj Ljubljana, Slovenia	1982
Investigation of molecular structure and dynamics by two-dimensional NMR exchange spectroscopy Universita di Napoli Naples, Italy	1983
Two-dimensional NMR spectroscopy: Basic principles and application in chemistry Universita di Napoli Naples, Italy	1983
NMR tomography Fifth Belgrade High School Belgrade, Yugoslavia	1984

The study of structure and dynamics of biomacromolecules by NMR spectroscopy Institute of Biochemistry, University of Belgrade Belgrade, Yugoslavia	1984
NMR tomography, new method for soft tissue imaging Lecture for general public in a series "Trends in Biophysics" Kolarcev Narodni Univerzitet Belgrade, Yugoslavia	1984
Principles of NMR tomography Nuclear Institute Boris Kidric Vinca, Yugoslavia	1985
Investigation of molecular structure and dynamics by 2D cross-relaxation NMR spectroscopy Australian National University Canberra, Australia	1986
An efficient method for eliminating noise in 2D cross-relaxation NMR Spectra Istituto per la Chimica di Molecole di Interesse Biologico del C.N.R. Naples, Italy	1986
Rotating frame nuclear Overhauser effect of macromolecules Istituto per la Chimica di Molecole di Interesse Biologico del C.N.R. Naples, Italy	1986
A novel methods for 2D data postprocessing Istituto per la Chimica di Molecole di Interesse Biologico del C.N.R. Naples, Italy	1987
The study of the structure of natural products by 2D NMR Istituto per la Chimica di Molecole di Interesse Biologico del C.N.R. Naples, Italy	1987
Physical Chemistry of Biological Systems Undergraduate, one semester course, 2 hours/week, Dept. of Physical Chemistry University of Belgrade Belgrade, Yugoslavia	1987
Schroedinger Equation and Hydrogen Atom Seminar series - Mathematical Methods in Chemistry University of Kragujevac Kragujevac, Yugoslavia	1987
Atomic Theory of Matter Undergraduate, two semesters course, 2 hours/week (wrote a book on the subject, published in Serbian in 1994, 500 pgs.), Dept. of Physical Chemistry University of Belgrade Belgrade, Yugoslavia	1988 - 1990

NMR Cross-Relaxation 4 hour course for NMR researchers, Dept. of Biochemistry and National Magnetic Resonance Facility, August University of Wisconsin at Madison Madison, Wisconsin	1988
Analysis of exchange mechanisms in protein solutions by 2D NMR spectroscopy Special seminar - 8/21/89 Mayo Foundation Rochester, Minnesota	1989
Introduction to 2D NMR spectroscopy 4th International Summer School on Biophysics, Supramolecular Structure and Function Dubrovnik, Croatia	1990
Structure of biomacromolecules by 2D NMR spectroscopy 4th International Summer School on Biophysics, Supramolecular Structure and Function Dubrovnik, Croatia	1990
From nuclear spin to NMR tomography Istrazivacka stanica Petnica Petnica, Yugoslavia	1990
Principles of physicochemical analysis Istrazivacka stanica Petnica Petnica, Yugoslavia	1990
Physical chemistry as interdisciplinary science Biophysical chemistry in seminar series - Dept of Physical Chemistry and Pphysicochemical Society University of Belgrade Belgrade, Yugoslavia	1990
Editing of cross-relaxation networks in macromolecules Bruker NMR Users Conference Westford, Massachusetts	1991
Molecular structure and dynamics by 2D NMR exchange spectroscopy European Molecular Biology Laboratory (EMBL) Heidelberg, Germany	1991
NMR structure and internal mobility of macromolecules University of Frankfurt Frankfurt, Germany	1991
NMR Spectroscopy For Mayo Investigators, fellows, and graduate students Mayo Graduate School Rocheste, Minnesota	1992
NMR Spectroscopy for Mayo investigators, fellows, and graduate students 26 hours, April - July Mayo Graduate School Rochester, Minnesota	1992

High Resolution NMR of Biological Fluids Clinical Chemistry Seminar, April Mayo Clinic/Foundation Rochester, Minnesota	1993
Nuclear Magnetic Resonance (NMR): From Atomic Nucleus to Biomedical Research Mayo Research Society, Rochester, Minnesota, March 8, 1994 Mayo Clinic/Foundation Rochester, Minnesota	1994
BSB 8005: Physical Biochemistry - NMR 1 credit; S-N; Winter Quarter; prereq Core 6100 or equivalent. Physical principles and measurements in NMR spectroscopy. Mayo Graduate School Rochester, Minnesota	1994 - 2004
NMR study of magnetization exchange networks and hydrogen bonding networks in protein Syracuse University Syracuse, New York	1995
Biochemistry Core Mayo Graduate School Rochester, Minnesota	1998 - 2003
Core 6100: Chemical Principles of Biological Systems An introduction to the fundamental principles of biomacromolecular structure and function, including nucleic acids, proteins, and biomembranes. The course also provides a survey of methods of structure determination and analysis, principles of catalysis, kinetics, and bioenergetics. Mayo Graduate School Rochester, Minnesota	1998 - 2003
Application of NMR Spectroscopy to Dynamical Problems in Chemistry Graduate course, five lectures, Department of Chemistry, April - May University of Naples Naples, Italy	1998
NMR Spectroscopy in Biomolecular Research Mayo Biomedical Engineering Seminar, April 30, 1999 Mayo Clinic/Foundation Rochester, Minnesota	1999
Application of NMR in biomedical research International Conference on Life Sciences Gozd Martuljek, Slovenia	2001
NMR in development of cellular therapies 3rd European-American School in Forensic Genetics and Mayo Clinic Course in Advanced Molecular and Cellular Medicine Zagreb, Croatia	2003
NMR in biomedical research Institut J. Stefan Ljubljana, Slovenia	2003

Tutorial in Protein Structure and Dynamics Co-directors Mayo Graduate School Rochester, Minnesota	2003
Cell-specific NMR imaging Serbian Physicochemical Society Belgrade, Yugoslavia	2003

Mentorship

Gacy, Mark A (Graduate Student) Description: Thesis Committee, Pharmacology	
Hoogstraten, Charles (Graduate Student) Description: Thesis Committee, Department of Biochemistry, University of Wisconsin	
Moncrieffe, Martin (Graduate Student) Description: Thesis Committee, Biochemistry	
Pucar, Darko (Graduate Student) Description: Thesis Committee, Pharmacology	
Gray, Barry (Graduate Student) Description: Thesis Committee, Research School of Chemistry, Australian National University	1991
Fejzo, Jasna (Ph.D. Student)	1992
Zolnai, Zsolt (Ph.D. Student)	1994
Sersa, Igor (Ph.D. Student)	1996

INSTITUTIONAL/DEPARTMENTAL ADMINISTRATIVE RESPONSIBILITIES, COMMITTEE MEMBERSHIPS AND OTHER ACTIVITIES (* indicates office held)

Mayo Clinic Rochester

Department of Biochemistry and Molecular Biology Academic Appointments and Promotions Committee Nuclear Magnetic Resonance Facility *Director	1990 - Present
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PRESENTATIONS

International

Oblik NMR Linija Sorbovanih Molekula S. Macura, N. Juraniæ, D. Vuèeliæ, and M. ui 27th Serbian Chemical Society Meeting Belgrade, Serbia and Montenegro	1973
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Relaksacija H+ jona u izmenjenim Ha and Hx Zeolitima S. Macura, D. Vucelic, and D. Karaulic 4th Yugoslav Symposia on Physics of Condensed Matter Slovenia	1974
National	
Search and discoveries along the outskirts of two-dimensional spectroscopy 21st Experimental NMR Conference (ENC) Tallahassee, Florida	1980
Multidimensional NMR spectroscopy 22nd Experimental NMR Conference (ENC) Asilomar, California	1981
Improved sensitivity and resolution in 2 J-resolved NMR of macromolecules Macura S, Brown LR 8th International Society of Magnetic Resonance (ISMAR) Chicago, Illinois	1983
Compression of NMR images Zolnai Z, Macura S, Markley JL Aug 22-28, 1998 8th Congress on Magnetic Resonance in Medicine San Francisco, California	1988
Compression of NMR images 8th Congress on Magnetic Resonance in Medicine San Francisco, California	1988
A novel method for two-dimensional data post-processing Macura S, Zolnai Z, Markley JL August 14-19, 1988 8th International Society of Magnetic Resonance (ISMAR) Madison, Wisconsin	1988
Quantitative measurement of interproton distances in proteins in solution 8th International Society of Magnetic Resonance (ISMAR) Madison, Wisconsin	1988
Zooming as a practical strategy for improving resolution in NMR spectroscopy 8th International Society of Magnetic Resonance (ISMAR) Madison, Wisconsin	1988
NMR and genetic engineering: How good is the match? Colloquium on Frontiers of NMR in Molecular Biology Park City, Utah	1989
Study of chemical exchange by 2D NMR spectroscopy 31st Experimental Nuclear Magnetic Resonance Spectroscopy Conference (ENC) Pacific Grove, California	1990
New directions in NMR analysis of protein structure and dynamics 75th Annual Meeting of the Federation of American Societies for Experimental Biology Atlanta, Georgia	1991

Block diagonalization of the cross-relaxation matrix via spin gymnastics during the mixing period of a NOESY experiment C. G. Hoogstraten, W. M. Westler, S. Macura, and J. L. Markley 33rd Experimental Nuclear Magnetic Resonance Conference Pacific Grove, California	1992 - Present
Complete elimination of spin-diffusion from selected resonances in two-dimensional cross-relaxation spectra of macromolecules by a novel pulse sequence (S. NOESY) J. Fejzo, W. M. Westler, J. L. Markley, and S. Macura 33rd Experimental Nuclear Magnetic Resonance Conference Pacific Grove, California	1992
Evaluation of errors in 2D exchange spectroscopy 34th Experimental Nuclear Magnetic Resonance Conference St. Louis, Missouri	1993
Experimental attenuation of spin-diffusion pathways in proteins using block-decoupled NOESY 34th Experimental Nuclear Magnetic Resonance Conference St. Louis, Missouri	1993
Interproton coupling across trans-peptide bond ($5J_{\alpha\alpha'}$) in chelated dipeptides N. Juraniæ, V. Likiæ, and S. Macura 34th Experimental Nuclear Magnetic Resonance Conference St. Louis, Missouri	1993
Block-decoupled NOESY: Decomposition of the proton relaxation matrix into noninteracting blocks Keystone Symposium - Frontiers of NMR in Molecular Biology - III Taos, New Mexico	1993
Evaluation of errors of interproton distances and correlation time determined from NMR cross-relaxation rates Keystone Symposium - Frontiers of NMR in Molecular Biology - III Taos, New Mexico	1993
Error propagation in distance-geometry computations Dakula, S. Macura, Zs. Zolnai, and J. L. Markley 35th Experimental Nuclear Magnetic Resonance Conference Pacific Grove, California	1994
Effect of hydrogen bonding on peptide bond $1J_{NC'}$ coupling N. Juraniæ, P. Ilich, and S. Macura 35th Experimental Nuclear Magnetic Resonance Conference Pacific Grove, California	1994
The measurement of proton auto-relaxation rates by network editing W. Westler, H. Zhao, S. Macura, and J. L. Markley 35th Experimental Nuclear Magnetic Resonance Conference Pacific Grove, California	1994

- Hairpin formation within the human enkephalin enhancer region: I. Structural studies 1994
 C. T. McMurray, N. Juraniæ, S. Macura, Y. Li, S. Chandrasekaran, R. L. Jones, W. D. Wilson, and H. Cheng
 35th Experimental Nuclear Magnetic Resonance Conference
 Pacific Grove, California
- Full matrix analysis of the error propagation in two-dimensional exchange spectroscopy 1994
 S. Macura
 35th Experimental Nuclear Magnetic Resonance Conference
 Pacific Grove, California
- Multicellular tumor spheroids in preclinical studies of 5-fluorouracil by nuclear magnetic resonance spectroscopy 1994
 T.B. Chen, S. Macura, and S. Vuk-Pavlovi
 85th Annual Meeting of the American Association for Cancer Research
 San Francisco, California
- Isotopically assisted topological editing of cross-relaxation networks in proteins 1994
 N. Juraniæ and S. Macura
 NMR as a Structural Tool for Macromolecules: Current Status and Future Directions
 Indianapolis, Indiana
- Hydrogen bonding networks in carp parvalbumin studied by amide 1JNC' coupling constant 1995
 N. Juraniæ, M. C. Moncrieffe, S. Macura, and F. G. Prendergast
 36th Experimental Nuclear Magnetic Resonance Conference
 Boston, Massachusetts
- Magnetization exchange network editing: Mathematical principles and experimental demonstration 1995
 Zs. Zolnai, N. Juraniæ, J. L. Markley, and S. Macura
 36th Experimental Nuclear Magnetic Resonance Conference
 Boston, Massachusetts
- Dept editing of cross-relaxation networks in proteins 1995
 S. Macura and N. Juranic
 4th Frontiers of NMR in Molecular Biology - IV
 Keystone, Colorado
- Hydrogen bonding networks in intestinal fatty-acid binding protein studied by amide 1JNC coupling constant 1995
 E. Kurian, N. Juranic, F. G. Prendergast, and S. Macura
 4th Frontiers of NMR in Molecular Biology - IV
 Keystone, Colorado
- NMR studies of the 23 mer DNA oligonucleotides containing the enhancer of the human proenkephalin gene sequence 1995
 H. Cheng, N. Juraniæ, S. Macura, and C. McMurray
 4th Frontiers of NMR in Molecular Biology - IV
 Keystone, Colorado

- Translation of uncertainties in NOESY peak volumes into uncertainties in the coordinates of computed structures 1995
Z. Dzakula, N. Juranic, Zs. Zolnai, W. Westler, S. Macura, and J. L. Markley
4th Frontiers of NMR in Molecular Biology - IV
Keystone, Colorado
- Accounting for the number of participating spins in intermolecular magnetization exchange 2000
N. Juranić, Zs. Zolnai, and S. Macura
41st ENC
Pacific Grove, California
- Mycobacterium tuberculosis catalase/peroxidase KatG in isoniazid activation and resistance 2000
F. Rusnak, N. L. Wengenack, S. Todorovic, J. R. Uhl, N. Juranić, F. R. Cockerill III, and B. C. Kline
American Society for Microbiology, Tuberculosis 2000: Past, Present, and Future
New York, New York
- Brain energetics and tolerance to anoxia in extreme hypothermia 2001
R. K. Andjus, Z. Dzakula, S. Macura, J. L. Markley, P. R. Andjus
31st Annual Meeting Society for Neuroscience
San Diego, California
- Spectroscopic detection of lysine/tyrosine cation- π interaction 2001
T. P. Burghardt, N. Juranić, S. Macura, and K. Ajtai
45th Annual Biophysical Society Meeting
Boston, Massachusetts
- Cell-specific magnetic resonance imaging in multiple sclerosis animal models 2002
I. Pirko, A. J. Johnson, L. E. Pease, S. Macura, M. Rodriguez
127th American Neurological Association Annual Meeting
New York, New York
- Molecular targeting of Alzheimer's amyloid plaques for contrast-enhanced magnetic resonance imaging 2002
J. F. Poduslo, T.M. Wengenack, G.L. Curran, T. Wisniewski, E.M. Sigurdsson, S. Macura, B.J. Borowski, and C.R. Jack, Jr.
32nd Annual Society for Neuroscience Meeting
Orlando, Florida
- Peptide bond polarization with hydrogen bonding networks of proteins 2002
N. Juranic, S. Kurian, M. Moncrieffe, V. Likic, F. Prendergast, and S. Macura
43rd ENC
Pacific Grove, California
- Molecular targeting of Alzheimer's amyloid plaques for contrast-enhanced magnetic resonance imaging 2002
J. F. Poduslo, T.M. Wengenack, G.L. Curran, T. Wisniewski, E.M. Sigurdsson, S. Macura, B.J. Borowski, and C.R. Jack, Jr.
American Society for Neurochemistry Annual Meeting
Palm Beach, Florida

Spectral resolution enhancement by spectroscopic MR microscopy 2003
I. Sersa and S. Macura
7th International Conference on Magnetic Resonance Spectroscopy, The
Heidelberg Conference
Snowbird, Utah

Regional

Analytical Nuclear Magnetic Resonance Facility 1994
P. K. Mishra, N. Juranic, D. Vikić-Topić, S. Macura
Department of Internal Medicine Research Forum
Rochester, Minnesota

Analytical Nuclear Magnetic Resonance Facility 1994
P. K. Mishra, N. Juranic, D. Vikić-Topić, S. Macura
Department of Neuroscience/Society of Neuroscience
Rochester, Minnesota

Analytical Nuclear Magnetic Resonance Facility 1995
P. K. Mishra, N. Juranic, D. Vikić-Topić, S. Macura
Department of Internal Medicine Research Forum
Rochester, Minnesota

INVITED PRESENTATIONS AND VISITING PROFESSORSHIPS

Invited Presentations

Cell-Specific NMR Imaging 09/2003
Serbian Physicochemical Society
Belgrade, Serbia and Montenegro

Nuclear Magnetic Resonance in Development of Cellular Therapies 09/2003
Third European-American School in Forensic Genetics and Mayo Clinic
Course in Advanced Molecular and Cellular Medicine
Zagreb, Croatia

Visiting Professorships

Department of Biochemistry 1986 -
University of Wisconsin, Madison 1990
Madison, Wisconsin

Department of Chemistry 1988
University of Naples
Naples, Italy

Research School of Chemistry 1988
Australian National University
Canberra, Australia

RESEARCH GRANTS AWARDED

Active Grants

Federal

Principal Investigator	Project 3 in: The Mayo Clinic Center for Individualized Treatment of Alcohol Dependence. Funded by National Institute on Alcohol Abuse and Alcoholism. (P20 AA 17830)	09/2009 - 08/2011
Co-Investigator	Enhancement of Cellular DNA Flexibility. Funded by National Institute of General Medical Sciences. (R01 GM 75965)	09/2006 - 08/2010
Co-Investigator	Structural Biology of Lysine Methylation in DNA Damage and Checkpoint Signaling. Funded by National Cancer Institute. (R01 CA 132878)	04/2008 - 01/2013

Completed Grants

Federal

Principal Investigator	KatG Peroxidase in Isoniazid Activation and Resistance. Funded by National Institute of Allergy and Infectious Diseases. (R21 AI 47142 (R21))	09/2001 - 09/2002
Co-Investigator	KatG Peroxidase in Isoniazid Activation and Resistance. Funded by National Institutes of Health. (R01 AI 47142)	05/2002 - 04/2004

Foundation

Co-Investigator	Real-Time In-Vivo Staining (RIVS) of CNS Inflammation Using MRI. Funded by National Multiple Sclerosis Society.	06/2002 - 05/2003
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PATENTS

Title	Patent number	Date issued
A method for recording two-dimensional nuclear magnetic resonance spectra and a device for carrying out the same Inventors: R.R. Ernst, K. Wüthrich, and S. Macura	US 4510449	04/09/1985
Verfahren zur aufnahme von kernresonanzspektren von molekulen in einem zweidimensionalen frequenz bereich und kernresonanz spektrometer zur durchfuhrung des verfahrens Inventors: R.R. Ernst, K. Wüthrich und S. Macura	DE 3143625	11/28/1985

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5. Karaulic D, Juranic N, Macura SI, Vucelic D. An analysis of proton NMR relaxation in water-zeolite system: II. The water--zeolite 4A system. *Glasnik Hemijskog Drustva Beograd = Bulletin de la Societe Chimique Beograd* 1977; 42:675.
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100. Sersa I, Macura S. Excitation of complex profiles by CARVE sequence: accounting for spectral dispersion and relaxation. *Int J Imaging Syst Technol* 1999; 10(3):225-241.
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ИМЕ И ПРЕЗИМЕ: Macura Slobodan, Mejo fondacija (Ročester, Minesota, SAD)		
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ЦИТИРАНОСТ НАУЧНИХ РЕЗУЛТАТА	Preko 4700	
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	ПРЕДСЕДАВАО МЕЂУНАРОДНИМ НАУЧНИМ КОНФЕРЕНЦИЈАМА	Visee od 15 puta
	ЧЛАНСТВО У УРЕЂИВАЧКИМ ОДБОРИМА МЕЂУНАРОДНИХ НАУЧНИХ ЧАСОПИСА	
	АУТОР МЕЂУНАРОДНЕ МОНОГРАФИЈЕ	
НАПОМЕНА		