

Nomination for 2016 Serbian MRS Award for
a Lasting and Outstanding Contribution to Material Science and Engineering
to **Gordana-Vunjak-Novakovic**

Gordana Vunjak-Novakovic is a world leader in Tissue Engineering and Regenerative Medicine, two fields of very active research connecting Materials Science and Biomedical Engineering. She has been one of the real pioneers in this field. Tissue engineering approaches are now finding application in regenerative medicine (repair of human tissues), study of disease ("organs on a chip" systems for drug development) and fundamental research (studies of development and disease) towards improving the quality of human life. Her sustained efforts to develop relations between Materials science and Biomedical engineering span over three periods of scientific activity: at Belgrade University (1974-1994), at the Harvard-MIT Division for Health Science and Technology (1993-2005), and at Columbia University (2005-present). She is the Mikati Foundation Professor of Biomedical Engineering and a Professor of Medical Sciences at Columbia University where she directs the Laboratory for Stem Cells and Tissue Engineering. She also directs the Bioreactor Core of the NIH Tissue Engineering Resource Center, serves as the lead for bioengineering at Columbia Stem Cell Initiative, and a honorary Professor of the Faculty for Technology and Metallurgy.

Gordana published 3 books 58 book chapters, and 334 journal articles (>17,400 citations, impact factor h=81 on ISI Web of Science; >28,700 citations, h=97 on Google Scholar; Scopus index 85). She gave 342 invited talks (including endowed, honorary and keynote lectures). She has been a frequent advisor to government and industry, a distinguished reviewer and advisor for NIH, a reviewer for 70 scientific foundations and 175 scientific journals. She has 76 licensed, issued or pending patents and has founded three companies that use advanced materials in tissue engineering: epiBone (<http://epibone.com>), Tara Biosystems Inc (<http://tarabiosystems.com>), and MatriTek (<http://matritek.com>). The reesarch funding supporting her lab in the last five years is ~\$25M.

Among her many recognitions, Gordana was elected to the American Institute for Medical and Biological Engineering (2000), inducted into the Women in Technology International Hall of Fame "for developing biological substitutes to restore, maintain or improve tissue function" (2008), and received the Clemson Award of the Biomaterials Society "for significant contributions to the literature on biomaterials" (2009). She gave the Director's lecture at the NIH in 2007, as the first woman engineer to receive this distinction. She was elected to the New York Academy of Sciences (2009), Academia Europaea (2012) for contributions to translational research, and the Serbian Academy of Sciences and Arts (2012) for contributions to biology and chemistry. She is a Fellow of the Biomedical Engineering Society (2009), a Fellow of the AAAS (2014), a Founding Fellow of the International Society for Tissue Engineering and Regenerative Medicine (2013), and one of the Foreign Policy's 100 Leading Global Thinkers for 2014. She was elected to the National Academy of Engineering (NAE, 2012) "for bioreactor systems and modeling approaches for tissue engineering and regenerative medicine", as the first woman at Columbia University to ever receive this highest recognition, to the National Academy of Medicine (2014) and the National Academy of Inventors (2014). She has also contributed to YUCOMAT conferences and to the activities of MRS –Serbia, as a co-author of a number of papers and the plenary lecturer at YUCOMAT 2014. For all that reasons it is my great pleasure to nominate her for The Main MRS-Serbia Award.

Prof. Dr Milenko Plavšić Belgrade Univ. NAES, UETS-
Member of MRS-Serbia Presidency)

I claim that this proposal is supported by a number of competent scientists, engineers and the members of MRS. In particular, considering each of scientific and engineering fields listed in the proposal, I can quote support of the opinions presented, by the following persons:

1. Prof. Dr Velimir Radmilović (Materials Science and Engineering) Belgrade University, Lawrence-Berkeley National Laboratory USA, cor. member of Serbian Academy of Sciences and Arts (SASA)
2. Prof. Dr Dejan Raković (Biophysics) Belgrade University, Vice President of MRS-Serbia
3. Prof. Dr Nenad Ignjatović (Biomaterials) Institute of Technical Sciences of SASA, Academy of Engineering Sciences - Serbia
4. Prof. Dr Stevo Najman (Cell Biology and Genetics) Medical School, University of Niš
5. Prof. Dr Djordjije Šaranović (Medical Sciences) Medical School, Belgrade University, CCS.
6. Prof. Dr. Gordana Ćirić-Marjanović (Physical Chemistry of Polymers) Dean of The Faculty of Physical Chemistry, Belgrade University
7. Dr Vukoman Jokanović (Biophysical Chemistry) Institute "Vinča" of Belgrade University, Engineering Academy of Serbia

Prof.Dr. Milenko Plavšić
(Macromolecular Sciences, Belgrade University)

Nominacija Gordane-Vunjak –Novaković
za Nagradu Društva za istraživanje materijala MRS-Serbia
za trajne i izuzetne doprinose nauci o materijalima i inženjerstvu materijala

Gordana Vunjak-Novaković je svetski lider u oblasti Inženjerstva tkiva i Regenerativne medicine, dve vrlo aktivne oblasti istraživanja koje povezuju Nauku o materijalima i Biomedicinsko inženjerstvo. Ona spada među istinske pionire u svetu u ovoj oblasti. Pristupi koji baziraju na inženjerstvu tkiva sada nalaze primenu u regenerativnoj medicini („popravljanje“ humanih tkiva), izučavanju bolesti (sistemi „organa na čipu“ za razvoj lekova) i fundamentalna istraživanja (razvojna kao i studije bolesti), koja za cilj imaju poboljšanje kvaliteta života ljudi. Njena dugogodišnja aktivnost u povezivanju nauke o materijalima i biomedicinskog inženjerstva odvijala se kroz tri perioda: 1974.-1994.g. na Beogradskom univerzitetu; 1993.-2005.g. na Harvard-MIT katedri za medicinske tehnologije; od 2005.-do sada na Univerzitetu Kolumbija u Njujorku gde je Profesor Mikati fondacije za biomedicinsko inženjerstvo i Profesor medicinskih nauka. Na Univerzitetu Kolumbija ona rukovodi Stem Cell and Tissue Engineering Laboratory. Rukovodi takodje Centrom za bioreaktore Nacionalnog instituta za zdravlje SAD i Bioinženjerskom inicijativom na Univerzitetu Kolumbija a takodje je počasni profesor na Beogradskom univerzitetu.

Gordana je publikovala 3 knjige, 58 poglavlja u knjigama i 334 članka u časopisima (prema ISI Web of Science izvoru ima više od 17 400 citata i h-faktor 81; prema Scopus izvoru više od 19 900 citata i h-faktor 85 a prema Google Scholar izvoru više od 28 700 citata i h-faktor 97). Održala je 342 predavanja po pozivu. Čest je savetnik vlade i industrije a istaknuti je recenzent i savetnik za Nacionalni institut zdravlja SAD (NIH), recenzent za 70 naučnih fondacija i za 175 naučnih časopisa. Ima 76 patenata, a osnovala je tri kompanije koje koriste nove materijale u inženjerstvu tkiva: epiBone (<http://epibone.com>) Tara Biosystems Inc. (<http://tarabiosystems.com>) i MatriTek (<http://matritek.com>) Istraživački fondovi kojima podržava aktivnosti svoje laboratorije u poslednjih pet godina iznose oko 25 miliona dolara.

Pored brojnih drugih priznanja, Gordana je izabrana u Američki institut za medicinsko i biološko inženjerstvo (2000.g.), primljena je u Medjunarodno zdanje slavni žena u tehnologiji „za razvoj bioloških zamena za uspostavljanje, održavanje i popravlanje funkcije tkiva“ (2008.g.), dobitnik je Klemson nagrade Društva za biomaterijale „za značajan doprinos publicistici o biomaterijalima“ (2009.g.). Održala je Direktorsko predavanje u NIH 2007.g. kao prva žena inženjer koja je ikada dobila tu čast. Izabrana je u Njujoršku akademiju nauka (2009.g.), Evropsku akademiju (Academia Europaea, 2012.g.) za doprinos primenjenim istraživanjima i Srpsku akademiju nauka i umetnosti (2012.g.) za doprinose biologiji i hemiji. Ona je ugledni član Društva za biomedicinsko inženjerstvo tkiva i regenerativnu medicinu jedna od „100 vodećih spoljno-političkih globalnih mislilaca“ u 2014.g.. Izabrana je u Nacionalnu inženjersku akademiju SAD (NAE, 2012.g.) za doprinose „bioreaktorskim sistemima i modelovanju u inženjerstvu tkiva i regenerativnoj medicini“ kao prva žena sa Univerziteta Kolumbija koja je ikada primila ovako visoko priznanje. Izabrana je takodje u Nacionalnu medicinsku akademiju SAD 2014.g. i Nacionalnu akademiju pronalazača 2014.g.. Doprinela je YUCOMAT konferenciji i aktivnosti MRS-Serbia kao koautor brojnih publikacija i kao plenarni predavač na konferenciji YUCOMAT 2914. Iz svih ovih razloga veliko zadovoljstvo mi je da je predložim za ovu najvišu Nagradu MRS-Serbia.

Prof. Dr Milenko Plavšić (Beogradski Univ. NIAS, SITS,
Član predsedništva MRS-Srbija)

Za ovaj predlog dobio sam podršku brojnih ličnosti kompetentnih za naučne i inženjerske oblasti koje se tu opisuju i članova MRS-Srbija, od kojih ovde navodim, po pojedinim oblastima stručnosti, sledeće kolege:

1. Prof. Dr Velimir Radmilović (Nauka o materijalima i inženjerstvo materijala) Bogradski univerzitet, Lawrence-Berkeley nacionalna laboratorija SAD, dop. član Srpske akademije nauka i umetnosti (SANU)
2. Prof. Dr Dejan Raković (Biofizika) Beogradski univerzitet, Podpredsednik MRS-Srbija
3. Prof. Dr Nenad Ignjatović (Biomaterijali) Institut tehničkih nauka SANU, Akademija inženjerskih nauka - Srbija
4. Prof. Dr Stevo Najman (Ćeliska biologija i genetika) Medicinski fakultet, Univerzitet u Nišu
5. Prof. Dr Djordjije Šaranović (Medicinske nauke i radiologija) Medicinski fakultet, Beogradski univerzitet, KCS
6. Prof. Dr. Gordana Ćirić-Marjanović (Fizička hemija polimera) Dekan Fakulteta za fizičku hemiju Beogradskog univerziteta
7. Dr Vukoman Jokanović (Biofizička hemija) Institut “Vinča” Beogradskog univerziteta, Inženjerska akademija Srbije.

Prof.Dr. Milenko Plavšić
(Oblast: Makromolekuli, Beogradski univerzitet)