

## **Nomination for the 2015 Serbian MRS Prize: Ivan Bozovic, BNL**

Ivan Bozovic is widely recognized as the world leader in the Materials Science of superconductors, and in atomic-layer engineering of new materials. Indeed, in 2012 he received the Berndt Matthias Prize for Materials Aspects of Superconductivity, the highest prize in this field. In 2014, he received the Moore Foundations Award (\$1.9 M) as one of only 12 recipients viewed as the world leaders in the Materials Synthesis, and the only awardee from all US National Laboratories.

He is generally viewed as the pioneer in developing the ALL-MBE technique; this was recognized by the 2004 SPIE Technology Prize (usually awarded to institutions and rarely to individuals) and the 2008 BNL Science and Technology Award. He is the inventor of Combinatorial molecular beam epitaxy technique (COMBE — European Patent EP1161986, publ. date 12.12.2001).

He is also a leading condensed matter physicist, as evidenced by the 2013 Max Planck Lecture and gold medal from MPI. He was elected a Fellow of American Physical Society (1998) and Fellow of International Society of Optical Engineering (s1997), as well as a Foreign Member of SANU (2009) and a member of Academy of Science of Europe (2014). He has published 18 research papers in *Science* and in *Nature* family journals, which puts him among top 3-4 performers in his field. He wrote 14 papers cited between 100 and 600 times. He is credited with the discovery of Interface Superconductivity (U.S. Patent No. 8,204,564 and *Nature* 2008), which is now a fast-growing field, and one can anticipate that he will receive even higher recognitions in the future.

While most of his work belongs to basic, fundamental research, some of it has been patented and has reached the market. For example, COMBE systems are being built by leading oxide-MBE manufacturers in USA (Veeco), Great Britain (Ilica), and Finland (DCA). While I have not researched the market data in detail, note that one COMBE system may cost up to 2-3 M\$, and perhaps a dozen are sold per year, so the financial effects are already substantial. Of course, Interface superconductivity, while still very early in its development, has a tremendous potential for ultrafast yet low-power-consumption electronics — it could grow to a multi-billion \$ per year market.

Last but not least, Ivan has done much service to the scientific and academic communities in former Yugoslavia, Europe, and US. He used to be the Dean of Physics at Belgrade University, and has maintained close ties and active collaboration with scientists in Serbia, including personal donations and financial support for stipends, journals and books, and for conference organization. Internationally, he has chaired over 20 conferences, and is a reviewer and Adjudicator for the leading journals such as *Nature*, *Science*, *Nature Materials*, *Nature Physics*, *Nature Nanotechnology*, etc., as well as for many funding agencies in US and Europe. He has been a chair or member of numerous Advisory Boards, prize and election committees, etc.