# WELCOME TO VII INTERNATIONAL SYMPOSIUM NIKOLA TESLA

Dear Colleagues,

Welcome to the 7th International Nikola Tesla Symposium which will be held simultaneously with Telfor 2011 Conference on 23 November 2011 in the Sava Center, Belgrade, Serbia.

The First International Symposium on the occasion of the 80th birthday of Nikola Tesla was held in Yugoslavia in 1936. The celebration included meetings organized in Belgrade, Zagreb, Gospic and Smiljan. Scientific meetings were held in Belgrade on May 28, 29 and 30, in the Engineering Union Building, new University Building and Technical Faculty. All papers presented were devoted to Tesla's research and invention, most of them by foreigners. In 1937, the Society for Foundation of the Nikola Tesla Institute in Belgrade published Symposium Proceedings. Nikola Tesla was invited but could not come due to old age.

On the hundredth anniversary of the Tesla's birth in 1956, many professional and community organization throughout the world celebrated the anniversary. In Belgrade the National Committee organized the Scientific Congress on July 10, 11 and 12. The papers, opening speeches and addresses by delegates were published in the commemorative volume issued by recently opened Nikola Tesla Museum in Belgrade.

The third Nikola Tesla International Symposium was held in Zagreb, Gospic and Smiljan on June 7-12, 1976. The Symposium was organized by the Yugoslav Academy of Sciences and Arts. Among 94 papers presented, 19 papers were devoted to Tesla's work.

The Fourth International Nikola Tesla Symposium was organized by the Serbian Academy of Sciences and Arts. Due to unfortunate events in Yugoslavia, the intention to visit Tesla's birth place was not fulfilled and the Symposium was held in Belgrade on September 28-30, 1991. Over thirty papers were presented by eminent scientists and experts, some of them from abroad.

The Fifth International Conference on the occasion of the 140$^{th}$ birthday of Nikola Tesla was held in Belgrade, from October 15 to 18, 1996. Authors from sixteen countries were present and 116 papers, divided into six sections, were submitted.

The Sixth International Nikola Tesla Symposium, on the occasion of 150$^{th}$ birthday of Nikola Tesla was held again in Belgrade. Throughout the whole 2006 year, in many places all over the world, 150$^{th}$ Anniversary of Tesla's birth has been celebrated and many exhibitions devoted to life and work of Nikola Tesla are refreshing memories of his great achievements.

The Seventh International Nikola Tesla Symposium, on the occasion of 155$^{th}$ birthday of Nikola Tesla will be held Sava center in Belgrade. The organizers of the Nikola Tesla Symposium are Nikola Tesla Society and Institute of Electrical Engineering „Nikola Tesla".

On the behalf of the Technical Program Committee, I wish you successful presentations and pleasant stay in Belgrade !

*Sincerely,*

*Prof. Dr. Bratislav Milovanović*
Nikola Tesla Symposium Chairman

On the occasion of 155th birth Anniversary of Nikola Tesla

# 7 International Symposium Nikola Tesla

Serbia, Belgrade, November 23, 2011

*Organized by*

**Nikola Tesla Society, Belgrade**

**Institute of Electrical Engineering „Nikola Tesla“, Belgrade**

*Co-organizers*

**Serbian Academy of Sciences and Arts**

**Academy of Engineering Sciences of Serbia**

**Nikola Tesla Museum**

**Nikola Tesla Foundation**

**ETRAN Society**

**Energetics Society**

**Telecommunication Society**

**MTTS Society**

*In co-operation with:*

**Serbian Ministry of Education and Science**

**IEEE Serbia and Montenegro Section**

**Tesla Memorial Society, New York**

*"Nikola Tesla" Society*

ELEKTROTEHNIČKI INSTITUT
NIKOLA TESLA
Beograd

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**Emilija Turković,** Institute of Electrical Engineering „Nikola Tesla“, Belgrade

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**Djordje Šijački,** Institut of Physics, Belgrade, Serbia

**Ljubo Vujović,** Tesla Memorial Society, USA

**Momir Vukobratović,** Serbian Academy of Science and Art, Serbia

*Meritorious Members:*

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Academician **Aleksandar Marinčić** †
Academician **Petar Miljanić**
Academician **Ilija Obradović**
Prof. Dr. **Vojin Popović**
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## TECHNICAL SUPPORT

**Danka Despotović**, University of Belgrade, Serbia
**Mirjana Jovanić**, ETRAN Society, Serbia
**Aleksandra Ranđelović**, PogledTel, Serbia

## CORRESPONDENCE

*Symposium Chairman:*
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18000 Niš, Serbia
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## SYMPOSIUM INTERNET SITE

Updated information can be obtained from the symposium web page:

**http://www.teslasymposium.org**

## VENUE - Sava Center

Symposium Nikola Tesla will be held on 23 November 2011 in the Sava Center, Belgrade, Serbia.

Sava Center is the largest congress, cultural and business center in Serbia, and one of the largest in Europe, whose main role is to organize congresses and art conventions and similar events. Sava Center was erected in 1977 as a modern building complex in one of the best areas in Belgrade, located just five minutes from the city center and 15 minutes from the Belgrade Airport. The Center has two deluxe category hotels in its immediate vicinity – the Hyatt Regency and the Hotel Continental Belgrade, the latter forming an integrated architectonics space with Sava Center comprising three units: Building A (an office building), Building B (a large concert congress hall), and the Hotel Continental Belgrade.

*Sava Center - building complex*

*Sava Center - Congress event*

## VENUE - Belgrade

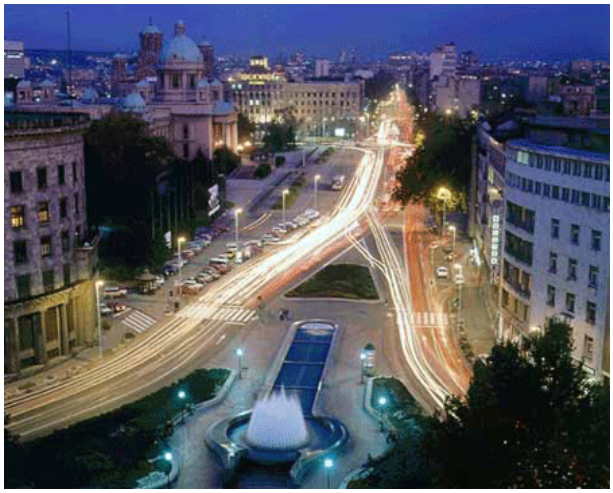
Belgrade is the capital of Serbia, which has been destroyed many times throughout the history. According to the archeological Neolithic discovery at Vinča, the

suburb of Belgrade, there was an inhabited place about seven thousand years ago at the mouth of the rivers Danube and Sava. This place (settlement) has been conquered by Kelths from Trachans in fourth century b.c. In third century b.c., Kelths built the fortress Singidunum which later on, during the Roman Empire, became an important roman strategic base. The fortress and settlement around first time has been named Belgrade - White Town (Belgrad, Beograd) in ninth century (878 a.c.). In that time, Belgrade was populated mostly by Slavs. Belgrade was always at someone main road from Neolithic time until today. Belgrade is well-known university city, with many cultural institutions. Very often it is the host of national and international gatherings.

*The Republic Squere*

*Sava River*

*St Sava Temple*



*Belgrade at night*

## NIKOLA TESLA

Nikola Tesla (1856-1943) significantly influenced technological development with his polyphase system inventions. The system is in cornerstone of modern electrical energy production, long-distance transmission, and use of electrical currents. Beside inventing the induction motor, he invented the Tesla coil - a high frequency transformer, which is an essential part of all contemporary high frequency devices. Tesla also pioneered research into other effects produced by his currents, such as the possibility of induction heating, ozone production, and effects on the human organism. His inventions have been crucial to the development of many of today's technologies including the radio, radar, television, motors of all kinds, and computers. He is also

credited with predicting the emerging energy problem as early as 1900. After death of Nikola Tesla in 1943, all his belongings have been inherited by his nephew and transferred to Belgrade where in 1955 the Nikola Tesla Museum has been opened. His ashes are also in the Museum. After his death, the name „Tesla“ was given to the unit of magnetic induction.

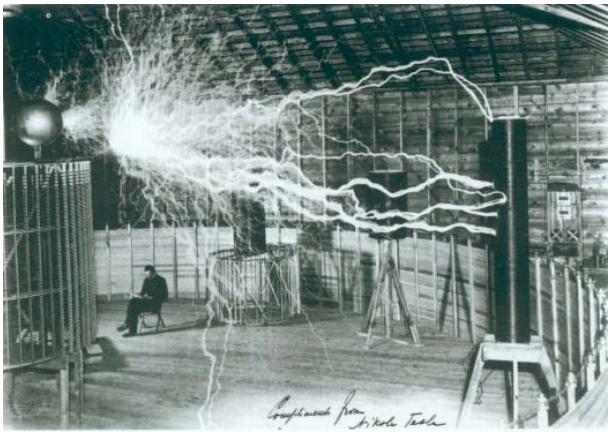
*Nikola Tesla's father Milutun, the priest of Serbian Orthodox Church*

*Tesla at age 23*

The Nikola Tesla Archive in Belgrade (Serbia) constitutes a unique collection of over 160,000 pages of the patents documentations, scientific correspondence, scientific papers, manuscripts, technical drawings, scientific measuring data, personal documents, and legal papers as well as over 1,000 original photographs of Tesla’s experiments and inventions, all of which are indispensable to the study of the history of electrification. Nikola Tesla’s Archive in Belgrade joins Memory of the World register.

*Nikola Tesla's Museum in Belgrade*

*Tesla Monument at Niagara Falls unveiled on July 9, 2006. Tesla is standing atop an AC motor, one of the 700 inventions he patented. In the background is Niagara Falls, Canadian side*



*Nikola Tesla's experiment*

## TRAVEL INFORMATION

If you fly to Belgrade we are going to organize the transportation for Symposium participants from the Belgrade Airport to hotel, and from hotel to Sava Center building well.

Do not hesitate to contact the Symposium Secretariat for any further information regarding your travel and transportation.

## VISAS

For participants from some countries a visa for Serbia is required. Please, take care of this on time and contact the Consular Section of Serbia embassy in your country. If you need any official invitation letter, please contact the Symposium Secretariat. The Invitation letter will be sent to you, as well as to your consular section of embassy Serbia

## CLIMATE

Belgrade is located in the moderate - continental climate zone. Usually the weather at the end of November is cloudy with rain possible.

## REGISTRATION AND INFORMATION DESKS

The Registration Desk, Information Desk, as well as Secretariat Office, will be open during the following hours:

| | | |
|---|---|---|
| *Tuesday,* | November 22 , | 10:00 - 19:00 |
| *Wednesday,* | November 23 , | 08:00 - 14:00 |

## SYMPOSIUM REGISTRATION

*The Symposium registration includes:*

- Admission to all Nikola Tesla Symposium sessions
- Admission to all Telfor forum sessions
- Symposium Kit (Bag, Proceedings, Symposium Program, Notebook, Pencil, etc.)
- Telfor Forum Welcome Reception

## PAPER PRESENTATION

Authors who will present the papers are kindly requested to contact their session chairmen 10 minutes before the beginning of the session. In this way, the authors will contribute to a better organization of the sessions.

The time for the presentation of the *invited keynote* papers including discussion is **limited to 15 minutes**. The time for the oral presentation of the *regular* papers including discussion is **15 minutes**. Papers should be presented only by the registered authors. PC computers and video-beam will be at disposal during the presentation.

## LANGUAGE

ENGLISH will be the official language of the Symposium. Also, papers can be presented in Serbian language.

## SYMPOSIUM TOPICS

Inventions of Nikola Tesla belong to three main fields:

- Electric power engineering
- High frequency engineering
- Mechanical engineering

In all previous Symposiums topics were connected with the mentioned fields but as the time passed historical reviews of Tesla's work decreased and some new related inventions were included. Since seventy years passed from the First Symposium, many scientists who were familiar with Tesla's life and work are not among living or are too old and cannot participate at this Symposium. However, the name of Nikola Tesla and the reference to his work are everyday growing – there are many books, films and Internet is flooded by his name.

A number of eminent scientists and Nikola Tesla biographers will be invited as special guests of the Symposium to present their papers. Other authors are invited to submit their extended abstract (maximum two printed pages) on the following topics:

1) Original rotating magnetic field Tesla motors and today's modifications
2) AC and DC transmission
3) Transformers from Tesla's time and today's modifications
4) High voltage, high power switches
5) Thermo-magnetic motor and Pyromagneto-electric generators
6) Super-conducting cables

7) Tesla-coil
8) Single-wire bulbs, fluorescent lights, Tesla and today's
9) Four tuned circuits Tesla radio
10) Two-carrier Tesla's radio system with AND circuit
11) Medical applications: x-ray, h.f. currents
12) Tesla turbines and pumps
13) Others

# SYMPOSIUM PROGRAM

# SYMPOSIUM PROGRAM

Wednesday, November 23

**Hall 3.1**
**09:00**

OPENING SESSION

**Chairmen**

Prof. **Bratislav Milovanović,**
*University of Niš, Serbia*

**Radomir Naumov,**
*President of Nikola Tesla Society, Serbia*

Prof. **Aleksandra Smiljanić,**
*University of Belgrade, Serbia*

Prof. **Zoran Jaksić,**
*IHTM Institute, Belgrade, Serbia*

## WELCOME TO SYMPOSIUM

Prof. **Petar Miljanić**
*Serbian Academy of Science and Art, Serbia*

Prof. **Nataša Nešković**
*Chair of IEEE Serbia and Montenegro Section, University of Belgrade, Serbia*

**Radomir Naumov,**
*President of Nikola Tesla Society, Serbia*

Prof. **Milun Babić,**
*President of Nikola Tesla foundation, Serbia*

**Aleksandra Drecun,**
*Center for Promotion of Science, Serbia*

## Plenary Lecture

**PL.1** **Tesla's wonderful world of electricity**
V. Jelenković
*"Nikola Tesla" Museum, Belgrade, Serbia*

**09:45** End of session

Wednesday, November 23

## SESSION I

**Hall 3.1**
**9:45**

*(All papers in session I are invited papers)*

**Chairmen**

**P. Miljanić,**
*Serbian Academy of Science and Art, Serbia*

**M. Stojić,**
*University of Belgrade, Serbia*

**B. Milovanović,**
*University of Niš, Serbia*

**S1.1** **Electrical Stimulation for the Treatment of Human Body: It all starts with Nikola Tesla**
D. Popović
*University of Belgrade, Serbia*
*Aalborg University, Denmark*

**S1.2** **Microwave Wireless Power Transmission: Past, Present and Future**
Dj. Budimir
*University of Westminster, UK*

**S1.3** **Nikola Tesla on Global Multimedia Communications**
Z. Bojković, D. Milovanović, B. Milovanović*
*University of Belgrade, Serbia*
**University of Niš, Serbia*

**S1.4** **Contribution of Nikola Tesla to development of modern communications**
B. Radenković, M. Despotović-Zrakić, Z. Bogdanović, D. Barać,
University *of Belgrade, Serbia*

**S1.5** **Tesla's "World System" Versus Contemporary Plasmonics: Where Two Extremes Meet**
Z. Jakšić
*Institute of Chemistry, Technology and Metallurgy, Belgrade, Serbia*

**S1.6** **Computer Simulation and 3-D Modeling of Original Patents of Nikola Tesla**
V. Vučković
University *of Niš, Serbia*

**S1.7** **Presentation of project results "Computer Simulation and 3-D Modeling of the Original Patents of Nikola Tesla"**
V. Vučković, V. Jelenković*
University *of Niš, Serbia*
** "Nikola Tesla" Museum, Belgrade, Serbia*

**11:45** End of session

Wednesday, November 23

## SESSION II

**Hall 3.1**
**12:00**

*(All papers in session II are invited papers)*

**Chairmen**

**M. Babić**,
*University of Kragujevac, Serbia*

**V. Litovski**,
University of Niš, Serbia

**Lj. Zivanov**
University of Novi Sad, Serbia

**S2.1** **It Would Be Very Beneficial to Society if we Promoted Nikola Tesla as a Serbian Brand and if We Used His Work for Stimulation of Development, Science and Creativity**
M. Babić, D. Jelić*
*Foundation "Nikola Tesla", Belgrade, Serbia*
**University of Kragujevac, Serbia*

**S2.2** **A new generation of transformers with wound core patented by ABS Minel Trafo Serbia**
Lj. Lukić, N. Pejčić
*ABS Minel Trafo, Serbia*

**S2.3** **Retrospective View of Nikola Tesla's Inventions**
A. Ćirić, B. Milovanović, M. Stanković
*University of Niš, Serbia*

**S2.4** **Influence of Various Parameters on Capacitance of Interdigital Capacitor and Its Optimization**
B. Rehak, A. Marić, N. Blaž, M. Damjanović, Lj. Živanov
*University of Novi Sad, Serbia*

**S2.5** **Optoelectronic Sensing Solutions in Power Systems**
J. Radunović, S. Petričević, P. Mihailović, M. Barjaktarović, S. Stanković*,
*University of Belgrade, Serbia*
**Ghent University, Belgija*

**S2.6** **Modeling and Simulation of Photovoltaic Cells - an Overview**
M. Andrejević-Stošović, D. Lukač*, V. Litovski
*University of Niš, Serbia*
**University of Apllied Sciences, Cologne, Germany*

**S2.7** **Efficiency Analysis of Simple Structures of Ferrite EMI Suppressors in Different Ferrite Materials**
M. Damjanović, Lj. Živanov, S. Djurić, G.Stojanović, A. Meničanin*
*University of Novi Sad, Serbia*
**IMSI, Beograd*

**14:00** End of session

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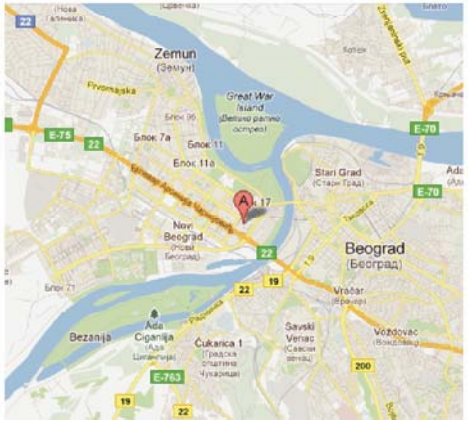
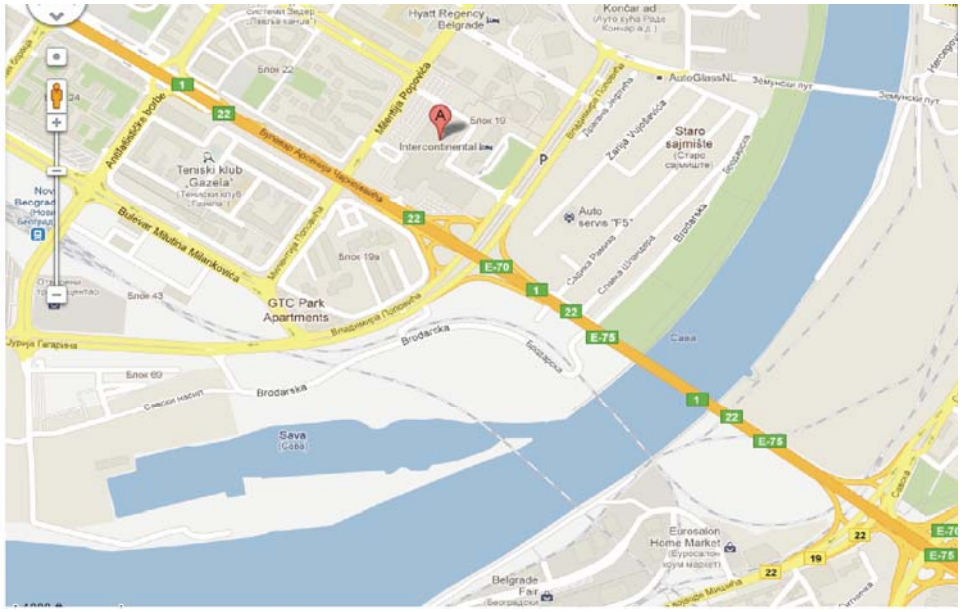
7th International Symposium „Nikola Tesla“
**Sava Center**, Belgrade, Serbia



Notes:

| Session Name * | Session mark |
|---|---|
| Opening Session | OS |
| Session I | S I |
| Session II | S II |

* All sessions will be held at the **Sava Center Hall 3.1**