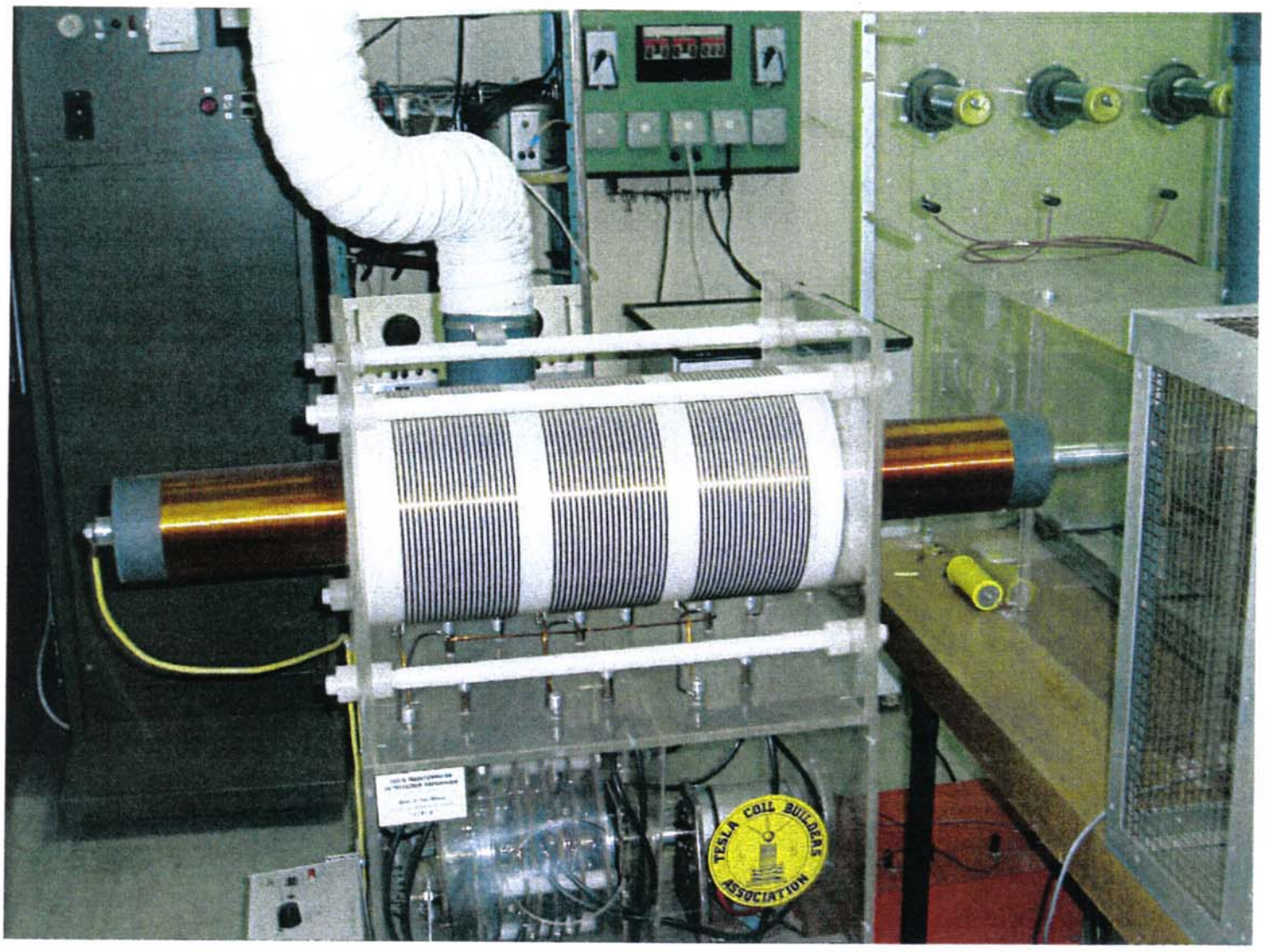
THE THREE-PHASE TESLA COIL

Vujo Miljevic
Vinca Institute of Nuclear Sciences
P. O. Box 522, 11001 Belgrade, Serbia
E-mail: vumi@vin.bg.ac.yu

A special Tesla coil that is fed from the three-phase AC mains power supply is described. Such Tesla coil gives uniform output voltage in each operating pulse, as it is fed from each phase of the mains with 120 degrees out of phase.



The primary coils are wound on a tube made of an insulator providing a very high voltage breakdown, and distances between adjacent primary coils and between primary and secondary coils ensure that no voltage breakdown occurs between them. The geometry of the primary and secondary coils is chosen in order to provide maximal coupling. Each primary coil has its own capacitor and two-electrode rotating spark gap. All three spark gaps are placed on the same shaft of a synchronous motor at relative angles of 120 degrees. The motor rotates with 3000 rpm synchronously with the AC mains power supply. The relative angular position of spark gaps can be adjusted with respect to the shaft during its rotation to ensure a discharge of each of three capacitors at the instant of its maximal charge voltage. The angular adjustment can be done automatically by electronic device - the phase corrector.

DIPLOMA

DR. VUJO MILJEVIC

IFIA CUP

A THREE-PHASE TESLA COIL

The Three phase Tesla coil has been awarded by the International Federation of Inventors' Associations' IFIA CUP on the occasion of the "INVENTIONS - BELGRADE 2006".

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