

## VLADIMIR ZORIN (1952 – 2012)



Vladimir Zorin is well known in Russian and world scientific communities. Vladimir was devoted to fundamental and applied research in the area of experimental plasma physics more than 40 years of his life. He started his professional path from engineer position and finished as head of Applied Plasma Physics Laboratory at the Institute of Applied Physics of Russian Academy of Sciences.

Vladimir began his experimentalist career at the IAP RAS in the early 1970s. His first scientific studies were devoted to high-pressure gas discharge stimulated by powerful millimeter wave gyrotron radiation. Almost 10 year later he turned his interest to investigation of low-pressure discharges, particularly the ECR discharge. At that time he first appeared in ECRIS community with an ambitious project of ECR source of multicharged ions with plasma heating by 37.5 GHz gyrotron radiation of 100 kW power. It was unique for its time and had no analogues in the world.

The use of high-frequency microwave radiation for plasma heating led to intense study of heavy gas discharge with unique parameters previously unreachable for ECR sources (plasma density  $10^{13}$ - $10^{14}$  cm<sup>-3</sup>, electron temperature about 100 eV, ion temperature at the level of 1 eV). Vladimir initiated and managed a wide range of investigations: studies of ECR plasma heating efficiency in open magnetic systems; the problem of plasma magnetic confinement and MHD stabilization in axisymmetric traps; studies of high current density ion beam formation from dense plasma of ECR discharge in heavy gases; research of plasma X-ray emission and possibility of its application for creation of effective EUV source; development of a short-pulsed high-current ECR ion source with a small plasma lifetime.

The brightest demonstration of Vladimir's success is a huge number of international contacts and collaborations with research laboratories around the world. All of his colleagues remember Vladimir not only as a successful scientist, but also as a pleasant and sociable person who could always collaborate in an atmosphere of friendship and trust.

Thanks to the work of Vladimir and his colleagues «Nizhny Novgorod ECR Team» became well-known in international ECR community and its creation and success are inextricably linked with Vladimir's name. Our team continues to develop his ideas.

The 23<sup>rd</sup> ECRIS workshop, being hosted by IAP RAS, Nizhny Novgorod in 2014, would be dedicated to the memory of Vladimir.

Nizhny Novgorod ECR Team