

NCBJ Department of Nuclear Techniques and Equipment - Experience and Competences



**NARODOWE
CENTRUM
BADAŃ
JĄDROWYCH
ŚWIERK**



dr inż. Jarosław Szewiński

Thermonuclear Fusion Projects Workshop
26.11.2018, IFJ PAN



Department structure:

- **TJ1** - Particle Acceleration Physics & Technology Division
- **TJ2** - Electronics and Detection Systems Division
- **TJ3** - Radiation Detector Physics and Plasma Research Division

Areas of competences:

- Particle accelerator physics
- Plasma physics
- Nuclear physics
- Advanced electronic systems design
- Software/Firmware/FPGA development
- Installation and technical works support
- Project management

Resources:

- Certified Isotope laboratories
 - Neutron generator (14 MeV)
- Certified B and A class personnel
- Experts in:
 - Physics
 - Electronics
 - Computer science
- Technical personnel





Selected major projects - fusion related, but only:

- **EuroFusion** Projects:
 - **JET** – Temperature comp. MPPC based DAQ system,
 - **WPENS**: Beam dynamics, Test systems: STUMM co-design, hot-cells design
Project Integration, accelerator to control system interface,
- **ESS** – Participation in LLRF development, FPGA Firmware development, delivery of interlock diagnostics devices, Gamma blockers
- **X-FEL** – LLRF, electronic systems, Software/Firmware, PLC-based modules, RF components (HOM couplers)
- **POLFEL** – Polish Free Electron Laser, a **complete big scientific infrastructure** which will be build in Świerk
- Other projects:
 - Neutron activation techniques
 - X-Ray techniques



The End



Thank You for Your Attention!

