Head of the Department: prof. dr hab. inż. Józef Jonak

OFFER FOR INDUSTRY

I. **DIAGNOSTICS OF MACHINES -** contact persons: *Józef Jonak* - j.jonak@pollub.pl; tel. 81 538 4239; *Łukasz Jedliński* - l.jedlinski@pollub.pl; tel.81 538 4499

Scope of services/cooperation
- ✓ Diagnostics of machine condition by non-demounting methods (vibroacoustic)
- ✓ Localization of noise sources in machines and industrial plants also under environmental conditions (acoustic camera)

Equipment and software
- o Acoustic cameraNor848A-10 (256 microphones, frequency range: 125 Hz - 15 kHz, object distance: 0.5 m to 200 m)
- o Laser vibrometer (vibration velocity measurement, frequency range: 0.5Hz - 22 kHz, distance to object: 0.1 m to 30 m)
- o Piezoelectric single and triaxial vibration acceleration sensors (PCB) and measurement boards (NI) (possible measurement range 1 Hz - 60 kHz, 16 channels)
- o Commercial version of Matlab

II. **STRUCTURAL DESIGN AND EXPERTISE OF MACHINES -** contact person: *Aleksander Nieoczym* - a.nieoczym@pollub.pl; tel. 81 538 4190

Scope of services/cooperation
- ✓ Expert reports on the innovativeness of machinery and technological processes (service for companies applying for funding to purchase machinery)
- ✓ Expert reports on the causes of machine damages (FEA strength analyses)

III. **STRENGTH, IMPACT AND MICRO TESTS AND FEM SIMULATIONS -** contact person: *Patryk Różyło* - p.rozylo@pollub.pl; tel. 81 538 4668

Scope of services/cooperation
- ✓ Strength tests (static experimental tests), in the load range up to 50 kN
- ✓ Dynamic tests, on thin-walled structures, in the energy range up to 1800 J
- ✓ Microscopic tests on real objects, with the possibility of recording digital imaging outside the microscope bench, at a maximum magnification of up to 200x
- ✓ Capturing and recording rapid (especially dynamic) processes that are imperceptible to the human eye
- ✓ Performing advanced numerical simulations (static/dynamic) using FEM

Equipment and software:
- o COMETECH testing machine model QC-505 (type M2F)
- o Instron Ceast 9350 drop tower
- o Keyence digital microscope model VHX-970F (with mobile head)
- o Phantom high-speed camera model Miro M310
- o Commercial FEM code – ABAQUS®
- o Single-channel acoustic emission system – VALLEN SpotWave 201
- o Digital Image Correlation (DIC) system ARAMIS 2D/3D