

3R ENVIRONMENTAL TECHNOLOGIES LTD.

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www.3ragrocarbon.com



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✓ **pyrolysis technology design** ✓ **fine carbon production** ✓ **carbon surface modification** ✓
carbon regeneration ✓ **agricultural biotechnology**

Agricultural Scientific Research BIOTECHNOLOGICAL FACILITY AND EQUIPMENT RESOURCES to Support EU FP7 RTD Participation

FACILITY RESOURCES of AGRO BIOTECHNOLOGY

Terra Humana Ltd. owns industrial site, highly suitable for FP7 programme implementations:

Agricultural Biotechnological Innovative Research, Demonstration, Validation and Training Center

- **Location: West Hungary**, 80 km W. of Budapest at M7 highway (2 kilometers from the site) and Balaton Lake East, 170 km East from Vienna.
- **Area: 8000 m² land area, 642 m² build** in area (recently rebuilt for RTD use, including 100 m² conference room)
- **Infrastructure utilities: full** (natural gas, industrial electricity, municipal water, own water well with large capacity, sewage water treatment facility, fire protection water pipe lines, fire protection water tank 100 m³)
- **Industrial permits: the site is fully permitted** by ten Authorities for coal & carbon, renewable energy and agro biotechnological industrial production and interrelated RTD-Demonstration programmes.

The permitting Authorities as follows:

- Environmental Protection Authority
- Industrial Safety Inspection Authority
- Health Inspection Authority
- Fire Protection Authority
- Municipal Building Construction Authority
- Plant and Soil Protection Authority
- Chimney Inspection Authority
- Water Works
- Gas Works
- Electric Installation Works
- New add-on buildings under construction: green house 300 m³ for plant tests.

Edward Someus have specific and full permit for: PERMIT FOR ENVIRONMENTAL ASSESSMENT AND DOCUMENTATION 1005/161/1997 (issued by Ministry of Environmental Protection): full permit for assessment of environmental impacts on air, water, soil, waste (incl. hazardous waste), biosphere and noise.

EQUIPMENT RESOURCES of AGRO BIOTECHNOLOGY for development and production of soil fertilization and soil microbiological products

- **Liquid fermentor** with 400 litre capacity, comprehensive installation & operating unit
- **Solid state fermentor** with 400 litre capacity
- **Inoculum storage and transfer** with 100 litre capacity
- **Sterile air supply** with temperature control between 15°C to 40°C
- **Pneumatical solid material transport**
- **Carbonization - pyrolysis rotary kiln, for sterile production of solid carriers:** comprehensive installation, continuously operated (up to 6000 h/year) indirectly heated, capacity 100 kg-250 kg/h up to 1000 t/year input (depending on the feed material qty), treatment temperature up to 850°C, incl. process control automatization and comprehensive field instrumentations.
- **Air selector of solid carrier materials** (0-5 mm), capacity up to 250 kg/h
- Liquid fermentor with 600 litre capacity (planned installation, hardware is delivered to the site but not yet installed)
- Liquid fermentor with 6000 litre capacity (planned installation, hardware is delivered to the site but not yet installed).
- AGRICULTURAL WASTE RECYCLING UNITS. FOR ADDED VALUE UPGRADE.

LABORATORY RESOURCES of AGRO BIOTECHNOLOGY - on site biotechnological laboratory:

- **Microbiological Optimalization Research Liquid Fermentor with 3 x 5 litre capacity** (Chemoferm)
- **Microbiological Optimalization Research Liquid Fermentor with 12 litre capacity** (Chemoferm)
- **Microbiological Optimalization Research Liquid Fermentor with 3 x 10 litre capacity** (INEL-RICHTER)
- UV spektrofotometer 190 nm – 1100 nm for liquid and solid materials
- Atomabsorption spektrofotometer for heavy metal analyses
- Research microscope 1000x with digital camera
- Research microscope 1000x
- Autoclave 100 litre
- Sterile box (several units)
- Centrifuge
- Ball mill unit 7 kg capacity
- Thermostat
- Vacuum drier
- Comprehensive laboratory installations (all stainless steel)
- **Laboratory thermal treatment test oven (4 litre), up to 1150 °C**
- **Sieve** – selection solid carrier materials 50 micron to 5600 micron
- **Drying, moisture, weight and volume standard on site measurements**
- When accredited and/or additional laboratory analytics are needed, than samples submitted to an very modern and well equipped accredited environmental laboratory 10 km from the site at an multinational chemical industrial factory. Mobile measurements are also available. Other labs and university research lab facilities are also connected to our works.