






Equipment overview

									
FACILITIES	PROCESSING EQUIPMENT	POWDER MANUFACTURING/PROCESSING	LABORATORY EQUIPMENT / ANALYTICAL	LABORATORY EQUIPMENT / APPLICATION	FACILITIES	MECHANICAL TESTING EQUIPMENT			
Test facilities of 2,500 m2 with complete infrastructure	Bench scale ball mill	Induction plasma system, Tekna TEKSPHERO-15/TEKNANO-15/TEKSPRAI	Rheology, MFR / MPV / Capillary and Dynamic	Bottles HIC (Household Industrial Chemicals) testing	Industrial plant with laboratory, pilot and full scale equipment	Wolpert 1000 kN Dynamic Tensile Testing Machine			
Transformators for > 1 MW power	Jaw crusher retsch B8300		Chromatography / HPLC/GC-MS	Tub sealing	Beneficiation plant with laboratory, pilot and full scale equipment	Amsler 250 kN Dynamic Tensile Testing Machine			
Cranes	KSP2 pilot scale automated crusher screening system		Karl Fischer / water content /Titration /pH measurement	Hinge Torque /Tensile and Fatigue		Zwick 50 kN Static Tensile Testing Machine			
Trucks and lifts	Manual screens	ADDITIVE MANUFACTURING/3D-PRINTING	Viscometer	Cap doming and Leakage	WATER BASED SYSTEMS	Si-Plan 25 kN Dynamic Tensile Testing Machine			
FURNACE / KILNS / OVENS	Retsch screening mod VE 200mmØ, 10 decks	Metal: LMD(deposition)/milling machine, DMG Mori Lasertec 65 3D Hy	Refracting index	Leakage testing	Multiple filterpresses (2 litre to 1000 litre)	Wolpert Charpy Impact Tester			
Induction furnace 16 kW - (1 kg Fe, Fixed position)	Kason brass screen 800 mmØ, 4 deck	Metal: selective laser melting (powder bed fusion) printer, SLM 280	GPC/SEC High- and rom- temperaure	Secure Seal Test (SST)	Vacuum filter	Indentent ZHU 250CL-S Hardness tester			
Induction furnace 30 kW - (6 kg Fe, Fixed position)	KSP screening 3 decks	Metal: bound powder extrusion printer, Markforged Metal X	Static decay	CO2 retention	Hydro cyclone 1"	Nabertherm 1250 °C Laboratory Furnaces			
Induction furnace 75 kW - (90 kg Fe, Lip axis tilt)	Erlich Lab scale pelletizer	Composites: FFF/CFE (extrusion) printer, Markforged X7	Electrostatic dissipation performance of materials.	Environmental Stress Crack Resistance (ESCR)	Hydro cyclone 2"	MICROSCOPY LABORATORY			
Induction furnace 225 kW - (300 kg Fe, Lip axis tilt)	Erlich pilot scale pelletizer	Plastics: FDM (extrusion) printer, Stratasys F370	Surface resistivity / sheet resistance	ARM- impact	Hydro cyclone 4"	JEOL 7200 F, FE-SEM Electron Microscope with EDS, EBSD and EBIC			
Induction furnace 250 kW - (340 kg Fe, Lip axis tilt)	Lab to pilot scale pelletizing discs	Plastics: FFF (extrusion) printer, 2x Ultimaker S5 Pro Bundle	(Volume) resistivity	PROSESSING EQUIPMENT	Multiple flotation cells (Bench to industrial scale)	Atomic Force Microscope (AFM), Modell XE70, Park Systems			
Induction furnace 600 kW - (1000 kg Fe, Lip Axis tilt)	Pilot scale roller press briquetter	Plastics: SLA (photopolymerization) printer, 2x Formlabs Form 3	Fox50 / Laser Comp/Thermal conductivity	Blown film line Collin (lab scale)	Chemical treatment facilities (Bench to industrial scale)	Mettler-Toledo Thermo-Gravimetric Analysis (TGA/DSC)			
Induction furnace 1000 kW - (1500 kg Fe, Lip Axis tilt)	Bunker for small scale hot and cold explosion tests	Plastics: FFF (extrusion) printer, PRUSA i3 MK3S	Fogging / Haake N8	Blown film line 3 layer Windmöller & Hölscher, Co-ex (full scale)	DRY BASED SYSTEMS	Leica Metallographic Analysis Light Microscope			
Electric Arc furnace (50 kW)	Bonnot lab extruder		Thermal; TMA/TGA/DSC/DMA	Cast-film/ PM	Electrostatic separator at 0-35 kV				
Electric Arc furnace (100 kW)	LABORATORY EQUIPMENT	POST-PROCESSING	FTIR, Spectrum / Perkin Elmer	Compounding / Extruders 16 / 24 and 26	Multiple magnetic separators (Bench to industrial scale)				
Electric Arc furnace (150 kW)	XRF		Barrier testing	Rotomoulding machine	Industrial scale classification system (>4 fraction)				
Electric Arc furnace (600 kW)	XRD		LABORATORY EQUIPMENT / MECHANICAL	Recycling pilot equipment (melt filtration)	Screens (Bench to industrial scale)				
Electric Arc furnace (800 kW)	ICP-OES		Hardness; ball, rockwell, shore A/D	Injection moulding machines -different sizes	DRYERS				
Lab scale rotary kiln	ICP-OES og ICP-MS combined for B and P analysis		Universal tensile machine	Ozone Chamber	Rotating drum dryer				
Pilot scale rotary kiln	LECO C+H		Flexural testing	Salt spray Chambers	Vacuum dryer				
Calcination furnace 100 kW	ELTRA C+S		Charpy and Izod test	Cooling Chambers	Vibrating plate dryer				
Lab scale high temperature tube furnace	LECO DNH		Softning point measuring equipment - HDT and Vicat	Cathodic Disbonding	CRUSHERS AND MILLS				
Lab scale scale high temperature tube furnace	LECO ON		Instrumented Falling weight	UV/Flouresense	Multiple Jaw crushers (Bench to industrial scale)				
High temperature thermo weight	AAS		Bose / Fatigue equipment	SunTest	Industrial scale Cone crusher				
Lab 100- Solidifying unit	GC-MS		Creep measurement	Climate Chambers	Multiple Ball and rRd mills (Bench to industrial scale)				
MMC Solidifying unit	BET		Film / thin foil test equipment	Weather Ometer	Jetmilling in inert atmosphere				
Nabertherm muffle furnace, 1400 degrees C	FTIR		Sealing equipment	Heating Chambers	LABORATORY EQUIPMENT				
HYDROMETALLURGICAL LAB	Horiba gas analyzer		Pipe testing	Autoclaves for high pressure and high temperature aging	Atomic Absorption Spectroscopy				
Bench and lab scale hydrometallurgical lab	Mastersizer 3000		Perkin Elmer Spectroscopy /FTIR	FIRE TEST	Multisizer Coulter Counter				
	Process MS online		Optical / Colour (BykGardner) /	UL 94 and Burn resistance for vehicles	Sysex FPIA-3000 particle image analyser				
	Etching bench		Food migration	SAMPLE PREPARATION	Mastersizer 2000				
	Spark OES		Abration	Milling / Cutting for Polymers	Karl Fischer Titrator				
	Equipment for PV characterization		FNCT /BELL	Band saw	Viscometer				
	Coin cell battery assembly and testing		Compression	Mixers / Shakers					
	Miscellaneous Equipment for sample preparation		MICROSCOPY	PARTICLE ANALYSIS					
	Cutting equipment and core drilling		Scanning Electron Microscope / EDS	Malvern Mastersizer					
	Chatellion C25 multipurpose strength measure equipment		Light / Optical Microscopes	Bulk Desity					
	Scanning Electron Microscope, "FEG-SEM" + EDS		Microtome	POLYMERIZATION					
	Optical microscopes		ADDITIVE ANALYSIS	Bench Scale Reactors					
	IR microscope		Antistatic Performance	Catalyst Development					
			Filter Test						
			Gas Fading						

FUTURE MATERIALS

NORWEGIAN CATAPULT CENTRE