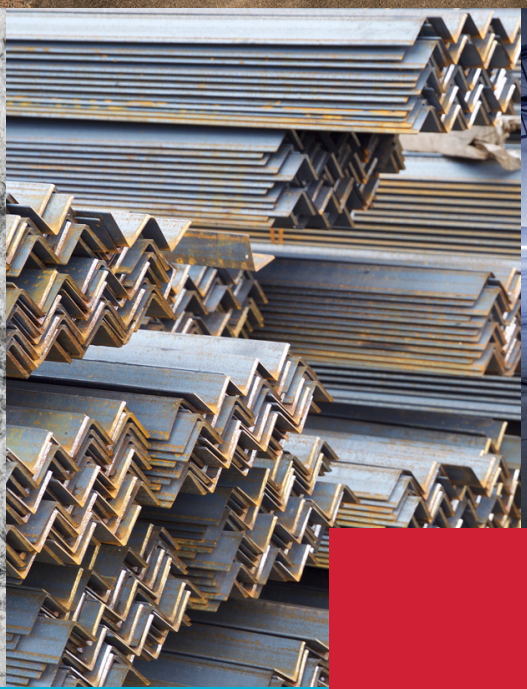
Business Unit

Technology

Your definitive partner for comprehensive solutions in the metals, minerals and mining industries



Delivering Growth - in Asia and Beyond.

DKSH

Business Unit Technology

By utilizing XRD and XRF technologies, precise analysis is facilitated, ensuring quality control, process optimization, operational efficiency, and sustainable practices within the industry

DKSH Technology is a leading provider of Market Expansion Services, proficient across various industries. As a total solutions provider and system integrator, we serve our customers as a one-stop-shop and provide customized technology solutions. We provide professional after-sales services as well as cover the entire product life cycle including installation and commissioning, final acceptance testing, production start-up support, training, maintenance, repair, spare parts and consumables supply as well as trade-ins. We operate as a trusted link between suppliers from Asia, Europe or America and customers in Asia, enabling suppliers to expand their markets.

Sales and services are our core competencies. Our sales, service and application specialists are highly trained and dedicated to deliver complete, integrated laboratory solutions to our customers. Industry-specific expertise, in-depth process knowledge and complementary product-service portfolio enable us to stand out as a total solutions provider.

Business Line Scientific Instrumentation

DKSH Technology provides a comprehensive range of instruments, consumables, application support, and services. These offerings constitute total solutions aimed at addressing intricate challenges, enhancing outcomes, and boosting productivity for our valued customers. Our solutions include the latest technological innovations to support universities, public and private research institutes, hospitals, industrial and commercial companies. Our solutions approach enables us to design, build, equip, and service entire laboratory.

High performance and trustworthy process optimization partner

We, as a solution provider experienced in the metals, minerals and mining industries, offer sophisticated, technologically advanced solutions for demanding production and laboratory. Our solutions encompass robust safety measures and advanced features tailored to meet the needs of our customers.

Our comprehensive range of instrumentation product, and highly skilled application and service support teams can assist you and your business in the following applications :

- Raw material exploration
- Material inspection and analysis
- Production and processing
- Laboratory advancement

We provide complete and integrated production, processing and laboratory solutions to :

- Ensure consistency of raw materials
- Qualify high performance of incoming materials
- Streamline quality control
- Reduce process downtime
- Optimize miling and granulation operations
- Improve manufacturing process
- Increase productivity and yield
- Accelerate innovation and product development

Market specific applications

With our profound market knowledge we are best positioned to serve our customers according to their needs. We provide products and services to the following industries across Malaysia.

Aeronautical

Automotive

Biotechnology and Life Sciences

Dies and molds

Healthcare and hospitals

Metals, minerals and mining

Oil and Petrochemicals

Pharmaceutical and biotechnology

Education and academics

Food and beverage

Semiconductor and electronics

Chemical

High performance material and process optimization

Optimized processes at the processing plant are driven by the needs to reduce energy consumption and increase margins. By combining robust and reliable systems, industry expertise and support, DKSH can assist you in improving efficiency throughout the value chain of mining activities, ranging from raw materials exploration to final product development.

At DKSH Technology, we carry instruments that are innovatively designed to match your needs across the mining processes. By partnering with DKSH, our instruments are capable of helping you reduce minerals extraction costs, miling product to the ideal grade size and achieve energy efficiency in communication and separation circuits.

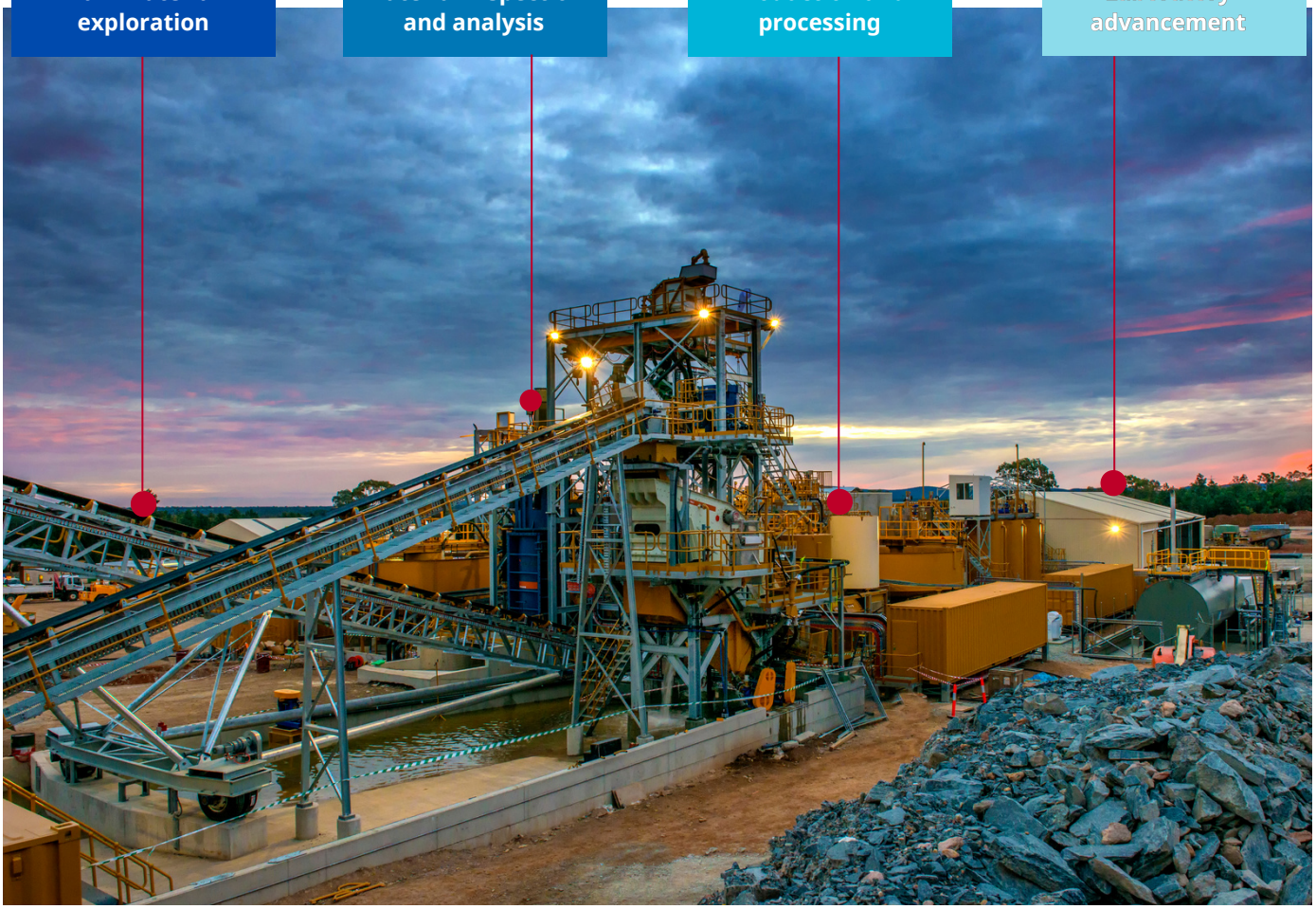
DKSH - Your reliable partner for efficient production processes

Raw material exploration

Material inspection and analysis

Production and processing

Laboratory advancement



Key advantages of efficient production

With efficient production processes, you can achieve several benefits and improvements within a business or manufacturing environment. Some of the key advantages include :

Enhance

Operational quality and productivity of entire facility

Increase

Employee satisfaction and productivity

Reduce

Operational costs

Achieve

Continuous improvement

Meet

Regulatory compliance

Maximize

Facility performance

Integrated solution from exploration to laboratory advancement

Raw material exploration

Utilizing the latest technology, technical and scientifically proven methodology in product development, our instruments are capable of detecting and identifying raw materials with unrivalled accuracies and reliability. These benefits streamline raw materials exploration, ensuring efficiency, safety, and profitability for end users.

ASD TerraSpec 4 Hi-Res Mineral Analyzer Spectrometer

Key Features :

- Industry leading performance in the short-wave infrared, SWIR 1/SWIR 2 regions for unparalleled alteration mineral identification
- Fast field scans without sample preparation, faster data capture at exploration targets and drilling sites
- Unique Spectral Geologist Pro Mineral Analysis Software

Key Application :

- Mineral exploration
- Mineral assemblage identification
- Drill cutting analysis
- Determining geochemical gradients
- Clay species delineation
- Core logging
- Deposit mapping
- Faster vectoring to ore body

ASD FieldSpec4 Hi-Res Spectroradiometer

Key features :

- Solar spectrum range detection capacity (350 nm – 2500 nm) provides uniform VIS/NIR/SWIR data collection across the entire Vis/NIR/SWIR solar spectrum
- Rapid scan collection enables high-quality measurements in limited time
- Superior signal throughput, signal-to-noise and radiometric performance ensures data quality

Key application :

- Spectroradiometry and radiometric calibration
- Spectral remote sensing
- Ground truthing
- Remote sensing and geology
- Atmospheric remote sensing research
- Airborne remote sensing measurements

Integrated solution from exploration to laboratory advancement

Material inspection and analysis

Identifying conforming and nonconfirming material is crucial at the inspection stage, which contributes to operational performance and productivity. Utilizing cutting-edge technology to streamline the material analysis process, which can be continuously monitored online, is imperative for process control and offers valuable insights for quarry development.

Production and processing

We offer a diverse range of mineral processing solutions and technologies that improve process efficiencies and aid the economic extraction of valuable resources. Our solutions include consultancy and technical support focusing on applications such as grinding, flotation, hydrometallurgy, solid liquid separation and materials handling. Our solutions are designed not only to decrease but also to optimize the costs associated with mineral extraction, including significant expenses like power and grinding media, which constitute some of the most substantial costs in the milling process. The instruments and solutions we provide will help in overall efficiency and process cost optimization.

Malvern Panalytical CNA³ Cross-belt Analyzer

Key features :

- Durable, stable neutron source for high-frequency elemental analysis in harsh environments
- Conveyor belt material measurement eliminates sampling, enhancing efficient characterization
- Compact, easy-to-install, maintenance-free neutron generator without holding production
- Optimize crushing, magnetic separation, leach pile composition for efficient quarry life

Key applications :

- Real-time data on coal composition, calorific value, ash content, volatile matter and moisture
- Copper particle size
- Analyze wide range of iron ore
- Control nickel grade, Fe/Ni ratio, basicity index and other key parameters

Malvern Panalytical Insitec Dry Particle Size Analyzer

Key features :

- Non-destructive sample measurement ensures cost-efficiency, waste reduction, and high reliability rate at > 95%
- Particle measurement ranges from 0.1-2500 µm, suitable for various process streams
- Fully automated operation to reduce training requirements
- Instantly detects and rectifies irregularities to prevent large-scale errors

Key applications :

- Miling
- Blending/homogenization
- Spray drying
- Granulation
- Emulsification
- Sedimentation
- Filteration

Nabertherm Furnaces for Foundry

Key features :

- Exclusive use of insulation materials without categorization according to EC Regulation No 1272/2008 (CLP) - no silicate wool, which is possibly carcinogenic
- Process control and documentation via Nabertherm Control Center (NCC) for monitoring, documentation and control

Key applications :

- Tilting furnace for Aluminum, Copper, Zinc

Lauda Ultracool Industrial Chiller UC-2400

Key features :

- New circulation chillers up to 50% more energy-efficient than conventional non-Ecodesign-compliant models.
- Compliant with the Ecodesign Directive
- Payback times of less than one year for energy-efficient circulation chillers based on temperature profile
- Connectivity feature LCD remote control, Ethernet, web server

enable data exchange and monitoring.

Key applications :

- Laser cutting
- Laser sorting
- Point welding
- Induction heating
- Injection molding

Integrated solution from exploration to laboratory advancement

Laboratory advancement

Laboratory advancement consists of **TWO** major elements :

- **Quality management** including quality control (QC) and quality assurance (QA)
- **R&D** including material research and product/method development

Quality management systems work hand in hand with quality enhancement initiatives to pinpoint the root causes of quality issues, subsequently devising strategies to eradicate these challenges. This investment is crucial for the technology roadmap, translating into product development, process refinement, and cost reduction. In industrial and technology sectors, R&D is a crucial component of innovation and one of the key factors in developing new competitive advantages.

DKSH ensures that both the elements are in good hands by providing not only a wide range of laboratory instruments, scientific equipment and consumables but also the knowledge base of our experienced application specialists and a well-trained service support team.

Malvern Panalytical Axios FAST Simultaneous XRF Spectrometer

Key features :

- High sample throughput with continuous loading via turret mechanism, flexible tray loading, and direct loading with barcode reader
- Enhance performance by simultaneous measurement of up to 28 elements with a minimum of 2 seconds of measurement per sample
- SST-mAX with ZETA technology improves instrument uptime, eliminates tube drift, and reduces calibration maintenance
- High sample throughput with Intuitive software interface enables flexible connection for automated analysis

Key applications :

- Analysis of low alloy steel
- Analysis of cast iron, iron ore, stainless steels and tool steels
- Calibration of alloys (titanium, aluminium, and low alloys)

Malvern Panalytical Epsilon 4 Benchtop EDXRF Spectrometer

Key features :

- High precision and accurate elemental analysis of ores and minerals
- Flexible wide-range oxide solution (WROXI) of rocks, ores, and minerals
- Reduce helium consumption with built-in sensors to compensate for environmental variations

Key applications :

- Ore characterization
- Geological research
- Bulk material analysis
- Trace element detection
- Mineral identification
- Mineralogical mapping for exploration
- Metallurgical application
- Core sample analysis

Malvern Panalytical Aeris Benchtop XRD Diffractometer Minerals Edition

Key features :

- The only automatable benchtop diffractometer for high sample throughput
- Rapid analysis optimizes processes, maximizes uptime, and minimizes feedback loops
- Plug-and-play simplicity
- Accurate mineral monitoring and input for hydrometallurgical models to obtain the most economic processing conditions
- Seamless integration in automation

Key applications :

- Mineralogical analysis
- Quantitative phase analysis
- Core sample analysis
- Structural analysis
- Environmental assessment

Sherwood Scientific 410 Flame Photometer

Key features :

- Quantitative elemental analysis such as Sodium, Potassium, Calcium and Lithium
- Flame ionization to determine the concentration of the target elements
- A fully integrated and automated system allows time-saving determination of metal ion concentration in composite minerals

Key applications :

- Phosphorus in Copper Alloys
- Aluminium Alloys for Copper, Nickel, Iron, Manganese and Titanium
- QC of industrial diamonds for trace metal contaminants
- Sodium and Potassium in silicates, minerals and ores
- Quality control of cement
- Preparation of gypsum and plaster board

Malvern Panalytical Zetium X-Ray Fluorescence Spectrometer

Key features :

- High sensitivity and sample throughput for analysis of steels and alloys (NiFeCo), copper alloys (Cu-Base) and low-alloy steel (LAS)
- SumXcore enhances metal production through WD-EDXRF technology
- Intuitive SuperQ software offers advanced interface, matrix correction, ED deconvolution integration

Key applications :

- Production control and R&D in metals such as Iron, Nickel and Cobalt alloys, scrap metal, Copper, Aluminium and Titanium alloys
- Trace element quantification in geological materials such as Iron ore, base metals, bauxite and alumina, rare earth elements (REEs), Phosphates, coal

Malvern Panalytical Empyrean X-Ray Diffractometer

Key features :

- The first intelligent and fully automated multipurpose diffractometer with new MultiCore Optics
- Transmission XRD for characterization of organic materials
- Small-angle X-ray scattering for particle size analysis
- Phase identification and quantification to determine composition or monitor purity
- X-ray reflectometry to determine thin film thickness and roughness

Key applications :

- Determine retained Austenite, stress and texture during metal production
- Thin film metrology
- Nanomaterials

Malvern Panalytical Epsilon XFlow

Key features :

- Fast response, robust, low maintenance, nondestructive and zero-waste
- Simultaneous analysis of a wide range of chemical elements ranging from sodium to americium (z=11 to 95)
- Interface to manufacturing execution systems
- Flexibility to cater for many different process streams and process conditions

Key applications :

- Monitor and react to changes in in situ leaching processes
- Check mine wastewater compositions
- Real-time analysis of liquors and reagents during ore processing
- Monitor yield in precious metal recovery
- Analyse the depletion of plating baths and powder coatings

Leica DM2700 M Upright Materials Microscope

Key features :

- Modular design includes lighting options, objectives and accessories
- High-quality optics to provide excellent image clarity, resolution, and color fidelity
- LED illumination provides consistent and energy-efficient lighting for samples
- Ergonomic design with adjustable viewing angles and comfortable observation position

Key applications :

- Mineral analysis
- Metallography study
- Failure analysis
- Quality control and quality assurance
- Research and development
- Steel quality rating

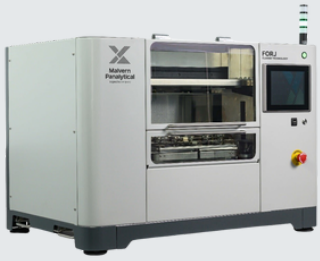
Malvern Panalytical FORJ

Key features :

- Exceptionally durable and resilient instrument built to withstand harsh conditions, thereby reducing the need for frequent maintenance.
- Rapid measurements, making it suitable for high-throughput analysis
- Consistent heating between fusion positions during sample preparation, avoiding non-repeatable results
- Simple installation and offers a secure, user-friendly interface

Key applications :

- Mining operations
- Mineral processing
- Ore sorting
- Water management
- Resource recycling
- safety monitoring



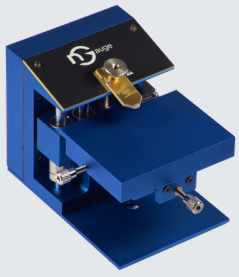
ICSPI nGauge Atomic Force Microscope

Key features :

- Data collection in 2-minutes
- Accessible with just three clicks, providing user-friendly 3D nanoscale imaging
- Fast Scanning - capture routine scans in 80 seconds
- Simple benchtop set-up and plug-and-play operation
- Ultra-durable probes capable of hundreds of scans

Key applications :

- Grinding methodology studies
- Surface topography analysis
- Mineral characterization
- Minerology and geology
- Corrosion analysis
- Characterize Calcium Carbonate (CaCO3) Aragonite crystals which make up the nacre layer of pearls



Malvern Panalytical Mastersizer 3000 Particle Size Analyzer plus Hydro Insight

Key features :

- Measure particle size of dry powder in the range of 10 nm to 3.5 mm
- Sample dispersion unit ensures accurate, reproducible measurements by delivering particles at the correct concentration
- Hydro Insight employs dynamic imaging to capture samples in a wet dispersion, generating valuable quantitative data on particle shape

Key applications :

- Particle size analysis of dry powder mining samples for quality control in material research
- Packing density mould-filling in ceramic and metal component production

Malvern Panalytical Epsilon 1 Portable XRF Analyzer

Key features :

- Non-destructive analysis
- 50 kV X-ray tube and generator is ideal for exciting heavier elements, resulting in faster analysis times and higher accuracy
- Built-in temperature and air-pressure sensors compensate for atmospheric variations
- A spillage protection foil is in place to shield the delicate heart of the system

Key applications :

- Direct quantification of rocks, ores and drill cores
- Fast positive material identification using FingerPrint software
- Elemental quantification of slags
- Quick screening of ferrous and non-ferrous metals
- Standardless analysis to quantify a wide variety of minerals without the need of dedicated calibrations

Malvern Panalytical Morphologi 4

Key features :

- Broad particle size range, from 0.5 µm to over >1300 µm
- Patented MDRS provides component-specific particle size and shape data for sample characterization
- Intuitive software ensures suitability for experienced and non-experienced spectroscopists alike
- Automated 'Sharp Edge' analysis enables detection of even low contrast particles

Key applications :

- Characterize particle size and shape of individual components in cement blends for product development and solve production problems
- Particle properties determine the effectiveness of abrasive minerals for use in cutting and polishing tools

Ohaus Adventurer™ Analytical Balance

Key features :

- Easy to configure and use with color touchscreen and icon-based user interface
- Specialized weighing modes, multiple connectivity options, and AutoCal™ provide versatility and flexibility for a range of applications
- Scales offer durable construction, large weighing surfaces, draft-shield design, and full housing in-use cover for labs and industrial environments

Key applications :

- Accurately measure the mass or weight of substances in R&D and QA/QC labs

Hielscher Ultrasonic Homogenizer

Key features :

- Portable ultrasonic homogenizers designed for processing a range of materials
- Controllable amplitude percentage dial ensures data reliability and reproducibility without the need for re-adjustment
- Adaptable for low and high sample volume applications ranging from 50 µl to 2000 mL that eliminates the need to acquire multiple ultrasonic laboratory processors

Key applications :

- Homogenizing, dispersing, and breaking down particles in powdered mined materials, as well as enhancing chemical reactions through sonochemistry, within the context of materials research and development

Lamy Capillary Viscometer

Key features :

- Rotating springless viscometer with 7" Touch screen
- Unlimited rotation of speeds between 0.3 and 1500 rpm
- Direct control of temperature unit
- Inbuilt software for programming
- Integrated temperature probe
- LIMS function
- Compatible with RheoTex software

Key applications :

- Identification of kinematic and dynamic viscosity of flow material in materials R&D

Lauda Circulation Chiller

Key features :

- A closed cooler circuit enhances efficiency, which allows 24/7 operation and saves maintenance time
- Efficient heat removal maintains optimal temperature and performance without manual chiller temperature adjustments
- Large LED display, user-friendly interface for quick system adjustments
- USB connections and safety alarm system enable data transfer for maintenance and analysis

Key applications :

- Process control in materials R&D

Surface Measurement Systems Dynamic Vapor Sorption Analyzer

Key features :

- The world leader in water/vapor sorption technology for physico-chemical characterization using kinetic systems
- Open stand design enabling easy access to sample pan
- Wide operational temperature range (5-85 °C) and uniform temperature enclosure
- Next-generation control and evaluation software for the most advanced experimental design and data analysis
- Multiple sorption/desorption and sample drying cycles
- Diffusion and permeability measurements
- Optional IR, Raman, and Video imaging

Key applications :

- Moisture sorption kinetics and isotherms
- Diffusion coefficient
- Hydration and dehydration studies
- Determination of amorphous content
- Humidity-induced phase transitions

Nabertherm Muffle Furnace

Key features :

- Heating elements on support tubes enable short heating times and 1400°C maximum temperature
- Dual shell housing made of textured stainless steel sheets with additional fan cooling for low surface temperature
- Adjustable air inlet integrated in door
- Solid state relays provide for low noise operation

Key applications :

- Heat treatment for annealing, tempering, and hardening metals and alloys
- Ashing
- Ceramics
- Glass

DKSH Technology Sdn Bhd (47709-T)

B-11-01, The Ascent, Paradigm, No. 1,
Jalan SS7/26A, Kelana Jaya
47301 Petaling Jaya, Selangor Darul
Ehsan
Malaysia

Phone: +60 3 7882 6285
Email: marketing.tech@dksh.com

DKSH