Newsletter

LPD Lab Services
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One-Stop Shop for Industrial Process Problem Solving, Consulting and Routine Analysis

COVID19, Open for business - Welcome to the May 2020 edition of LPD Lab Services newsletter.

LPD Lab Services are the experts in material investigations and scientific problem solving for products and processes across all sectors within Manufacturing, Engineering, Development and Research. Demand remains strong for the laboratory's work and consultancy which has included support activities to fight the virus but wider manufacturing has remained open in many sectors in the UK. LPD Lab Services continue to investigate and solve technical issues within products, production process as well as facilities and infrastructure ultimately keeping the cost of product ownership down for clients.

LPD Lab Services continue to develop innovative analytical solutions for in-process manufacturing, finished products and for development of new products, chemicals and materials. We pride ourselves with resolving some fascinating technical problems from across the UK and wider world. Our scientific credibility and confidentially is core to our business model.

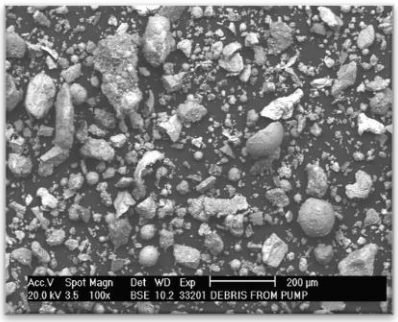
This edition at LPD Lab Services covers:

Continued Operation During COVID-19 - OPEN for Business

LPD Lab Services continue to be open for business as we provide analytical support to key front line businesses in the fight against COVID-19, as well as serving medical/healthcare, pharmaceutical, construction, automotive, aerospace, general engineering and chemical sectors for example. Mindful of social distancing, we are operating with close to normal response times, providing a dedicated analytical and consultancy service to the scientific and engineering community.

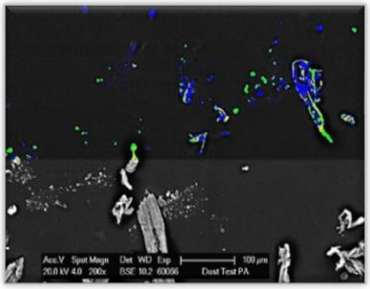
Avoiding face-to-face contact and visits, efficient and clear communication is more vital than ever to provide the reactive and proactive service customers rely on with LPD Lab Services. Skype, MS Teams and MS Zoom video conferencing systems are now commonplace at LPD and have proved an effective solution for new clients, updating client projects and sharing information.

Automated Particle Characterisation and Analysis



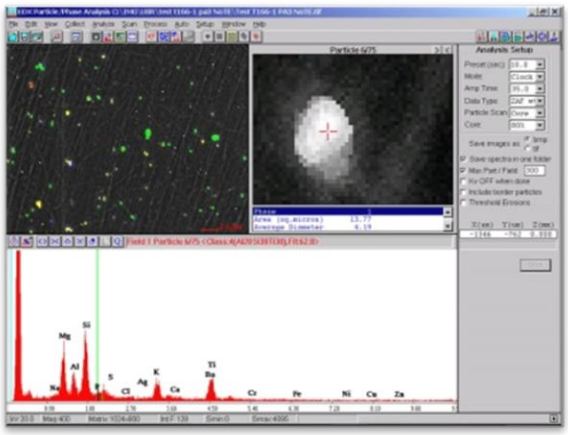
LPD have utilised Scanning Electron Microscopy (SEM) for analysis as a key technique for many years. The technique has been used across a wide array of sectors including pharmaceutical, medical device, chemical, nuclear, construction, automotive, aerospace, forensics, food and environmental to name but a few.

Particulate matter is everywhere and across all environments and throughout manufacturing and production processes, resulting in analysis being a common requirement, but often with a very different focus:



- **Clean room facilities**: Have very *low particle* counts by careful and costly design, but identification of sparsely collected particles is essential to avoid contaminated products and production yield issues.
- **Office and production environments**: Often driven by *Health and Safety* implications, particulates need to be assessed in terms of respirable threat, as well as potential chemical toxicity.
- ***Manufacturing* and operational failure investigations**: Diagnosing the source of particulates that build up at key process locations is essential in mitigating both *contamination* of product and in predicting *failure* of manufacturing equipment used along the production line.
- **R&D:** Analysis of particle generation during a product use is often a key requirement (e.g. *automotive emissions*, *aero engineering* components, *engine wear*, *braking systems* and even consumer products such as printers).

For most particulate analysis the aim is identifying particles covering the physical and compositional (chemical) characteristics, with both aspects essential in being able to define a likely source and appropriate methods for mediation.



LPD originally developed an automated particle analysis system and chemical mapping using SEM/EDX for a pharmaceutical client.
Fast forward several years and LPD have continued investigating and developing new applications including Dedicated Particle Analysis using SEM/EDX for particulate matter. Dedicated Particle analysis uses Backscatter data generated from the SEM and using our bespoke software provides a map of dimensional and compositional information from within the Field-of-View (FoV) of the sample surface.

The software can analyse each individual particle, including coordinates, size, shape and compositional information, with a compositional X-ray spectrum acquired and stored for every particle. This allows a much efficient use of analysis time than is possible by standard EDX mapping in SEM instruments generating much more statistical information on the types and size of particles; far beyond that possible by optical microscopy inspection too.

If you need more information on the technique or application, please contact Dr Simon Romani.

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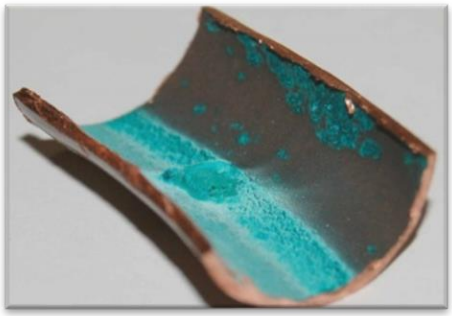
Quantitative Alcohol Testing Methods

LPD Lab Services have developed and validated a method of analysis for alcohol testing. The samples can range from gels, handwipes or solutions and will encompass a range of alcohol chemical substances including Methanol, Ethanol, Propan-1-ol, Isopropyl Alcohol, Acetone and Butanol. The method is quantitative and selective and uses a Gas Chromatography (GC-FID) technique.
Alcohol values can be also tested by Refractive Index (RI) but traditionally this is not as accurate as using GC-FID. Both methods are available at LPD and depending on your business requirement we will have a test to suit your need. If you need more information on the technique or application, please contact Dr Wyndham Johnstone.

Chemicals and Materials Compatibility

Chemical and material compatibility is a common problem that affects many different products in the market in their day to day use and application. Manufacturers cannot always control what their products are exposed to once they leave the factory or in their service life.

As a rule, we take materials and we build with them, we clean and sterilise them and we create new products and formulations, new applications. It is a necessity of innovation! Sometimes, and usually completely innocently, we can harm and shorten the product life span and performance; cracking, crazing, softening, oxidising or chemically attacking and degrading causes premature failure.



Manufacturers can make recommendations to avoid certain incompatible practices and exposures, though they cannot cover every eventuality in the world, but the product's quality reputation can be damaged as a result. LPD Lab Services have been supporting materials compatibility within a number of key sectors – medical device, construction building materials and chemical plant manufacturing.

These have been functionally seen to be incompatible with certain plastic pipes and causing swelling and burst pipes. In essence, the chemical and physical interactions of modern materials need to be better understood and application methods changed to avoid consequential damage costs.

For more details of our materials compatibility and consultancy please contact Dr Stephen Jenkins.

LPD Lab Services have seen a number of incompatible materials being utilised within the building industry, such as pipe phenolic foams used in pipe insulation and certain intumescent caulking materials which is used to seal and prevent fire spread within buildings.

Successful award of UKAS ISO/ IEC17025:2017

UKAS TESTING
2766

LPD Lab Services was visited by UKAS in February 2020 for its yearly reassessment external audit of its ISO17025 accreditation and transition to ISO/IEC17025:2017. This assessment was successful, and the laboratory now has its new certification to ISO/IEC17025:2017.

LPD Lab Services have a number of certified methods currently but are always open to work with clients who require new methods that need to have certification.

Stephen Jenkins, LPD Managing Director commented, "This is a great achievement and a combined company effort working and developing quality standards which are recognised by industry bodies and clients. LPD are fully committed in scientific integrity to ensure quality, traceability, and transparency in developing our analytical data and reports."
For more details of our certification go to the LPD website or speak with Mike Ellicott our Quality Director.

To understand more about our outsourced function and other expanding technical services and analytical testing capability please visit our website https://www.lpdlabservices.co.uk/index.php, or you could call us on 01254 676074 and discuss the problem/technique.

Alternatively, you could arrange to meet the team and see the laboratory located in Blackburn, Lancashire.

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