

NEWSLETTER

LPD Lab Services

TEL: +44 (0)1254 676 074

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

Welcome to 2019 and the January Winter edition of LPD Lab Services newsletter.

LPD Lab Services, are experts in materials chemical and scientific problem solving for products and processes. Despite recent uncertainties in the UK, demand remains strong – especially in chemical analysis. Investing in solving technical issues in manufacturing and product quality keeps cost of ownership down. Continuing to support clients we have a new head count for 2019 with the addition of Harry Knappett as a Senior Analytical Chemist.

LPD Lab Services continue to develop innovative and fascinating analytical solutions for in-process manufacturing, finished products and for development of new products. We really pride ourselves with resolving some fascinating problems from across the world. Our scientific credibility in speaking in a language our customers can understand and act upon with confidentiality is core to our business model!

One technique, always in demand across all industrial sectors is Scanning Electron Microscopy (SEM) including investigating particle and contamination issues; creating images and chemically identifying likely sources. This information is provided for scientists, managers and marketers alike!

Harry Knappett - Senior Analytical Chemist

At the start of 2019, Harry Knappett joined LPD Lab Services as a Senior Analytical Chemist. He has a BSc(Hons) in Chemistry and is a Chartered Chemist.

Harry has a wealth of experience working across various industries, as a public analyst he was involved in a large number of different sample types including food, post-mortem samples, fertilizers, animal feeding stuffs, toiletries, cosmetics, furniture, water and soil. This included method development, validation and documentation with a wide range of analytes including metals, drugs and toxins, hydrocarbons, preservatives and vitamins.

As a Senior Analytical Chemist at LPD Lab Services his main responsibilities involve using traditional chemical analysis methods including titrimetric methods, HPLC, FTIR, UV-Vis spectrophotometry, GC-MS, GC-FID and AAS. He develops bespoke methods and conducts a variety of extraction techniques as well as carries out method validation. These techniques are applied to the identification and quantification of chemicals and materials and are additionally used to investigate and solve technical problems across a wide range of different industries.

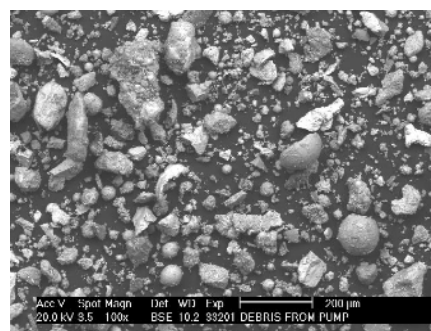
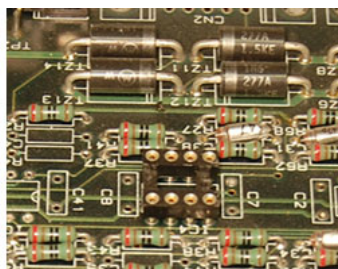


Applications of SEM/EDX - Particle Contamination Elimination

LPD Lab Services are experts in scanning electron microscopy (SEM) and its practical application in the manufacturing industry. The presence of particles can be unwanted and can risk the product's reliability and safety as well as impact the machine or equipment in the vicinity. Particles can be isolated and then analysed in terms of their physical appearance by SEM and also their chemical elemental signature by EDX. This can help identify the root cause of the particle and explain its origin within the process or product.

Problem solving for particles can be varied and applications seen in the laboratory have included:-

- Particles and fibres in biological solutions, identifying them and type-matching where possible to reference materials.
- Particles in engine components which seize moving parts, cause scoring and damage to tight tolerance metal, plastic and composite material parts.
- Particles embedded within plastic films physically or chemically extracting them to isolate and analyse them.
- Particles from refrigerant coolant systems that block filters and cause malfunction of the system.
- Particles from air filters, screening of typical particle types or where they are coming from.
- Particles and zinc whiskers from computer data centres, identifying the presence of zinc whiskers (very hazardous to electronics in PCBs) and also particle contamination in critical areas such as conducting metal wear particles from robot power bars.
- Particles entrapped in paint systems that have caused blistering. Cross-sectioning to determine the layer and particle source.
- Particles and dust from warehouses that is accumulating at a faster rate than expected. Assessing the particle types and dust for health and safety evaluation and control.
- Particles, residues and unknown deposits on PCB circuits that can cause corrosion problems.



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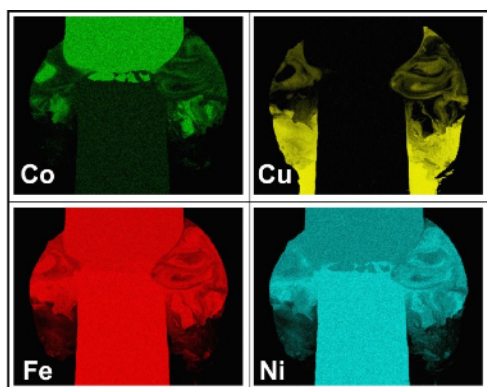
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Cross-Sectional SEM Investigations

- Cross-sectioning of paint films to look at individual paint layers and the presence of harmful lead/chromium/cadmium within the paint layers.
- Cross-sectioning of degraded plating layers to determine plating thicknesses by direct measurement and location of flaws.
- Cross-sectioning of metals to look at corrosion pitting (depth and corroding species) corrosion ingress into substrate, porosity, phases



The Quality is in the Image

LPD Lab Services operate a robust quality system audited by suppliers, clients and governing body (UKAS) ensuring our data integrity and compliance.

If you have an application not yet mentioned and need an investigation into particles, dust or contamination the please contact Dr Stephen Jenkins or Dr Simon Romani for more a more information.



Outsourced Development / R&D /Analytical Labs

Since launching this new service at the end of 2018, LPD Lab Services have received enquires about the scope, size and capability. Early discussions with clients have confirmed they suffer from the lack of investment, change in business core functions and a need to find “cost effective solution” to maintain a competitive edge within product assessment, release and development.

LPD Lab Services business model allows clients to outsource some or all of their Development / R&D function. Our service covers independent testing, routine analysis and technical consultancy In-house, we have practical experience in supporting routine analysis, quality testing and New Product Development using analytical evidence, developing new IP and technical problem solving for the client’s exclusive use and ownership.

To understand more about our outsourced function and other expanding technical services and analytical testing capability please visit our website , 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.