

# NEWSLETTER

**LPD Lab Services**

TEL: +44 (0)1254 676 074

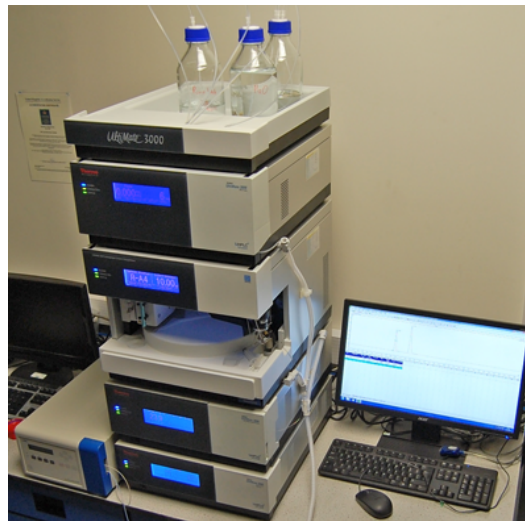
**One-Stop Shop for Industrial Process Problem Solving, Consulting and Routine Analysis**

## HPLC – Capability Increases

Following the issue of the Spring 2012 Newsletter announcing the laboratory's purchase of an Agilent 1050 HPLC, the work for this instrument and the lab's staff of organic chemists capable of method development and validation have grown. Some specific customers have provided sufficient work to justify the purchase of a new HPLC Thermo Fisher Ultimate 3000 instrument (and uHPLC) which are being used to develop bespoke analytical methods for the laboratory to transfer onto the customer's own in house quality control labs or as a base for ongoing routine analytical support measurement of products.

HPLC can be used to analyse raw materials and chemical products such as aliphatic and aromatic hydrocarbons, amines, amino acids, peptides, proteins, sugars, lipids and pharmaceutical active compounds. It can be used in stability studies, nicotine quantification plus Bisphenol A and offers phthalate migration in plastics and polymers.

The lab also has experience in sophisticated preparation methods such as Soxhlet and solid phase extractions (SPE).



## Coating Plating Bath Problem Solving

Built on experience in Philips, the laboratory has significant experience investigating problems with electrolytic and electroless plating baths and the resultant coatings; in particular nickel. These coatings can be decorative or for functional reasons like electrical contact or corrosion protection. There can be issues with bath stability from organic contaminants, which can be investigated by FTIR and GC-MS following chemical extractions, or physical chemical staining on or in the coatings themselves. SEM/EDX and XPS are frequently used to investigate the coating failure mechanisms or underlying seeding layers. Issues can involve blistering, delamination, pitting or discolouration. Where other coatings are applied on top, targeted reverse engineering experience can be used to work out where in the complex array of process steps the problems have occurred. This can include optical microscopy and SEM/EDX cross-sectional work or determining the locus of failure in the material stack with SIMS or XPS.

## RAPRA & Technical Consultancy Services

It is now over 2½ years since LPD Lab Services became a preferred supplier following customer recommendations to RAPRA. In this time LPD has become the go-to-company for unusual polymer, rubber and materials interactions problems beyond the capabilities of traditional measurement houses/test labs.

Work has involved polymer and rubber degradation investigations like cracking, crazing, leaching and chemical or solvent attack, delamination and adhesion issues, in paint coatings, laminates and adhesive systems, mobile species, stabiliser and plasticiser investigation curing issues, composite and glass and carbon fibre reinforced polymer failures, moulding issues, peel tests, pipe failures, materials identification, materials inhomogeneity problems to name a selection. Materials include nitrile rubbers, polyurethanes, polystyrene, polyethylene, (HPDE, LDPE etc), PVC, PTFE, PP and Aramids. The relationship and trust between LPD and RAPRA continues to grow as RAPRA widens the support services it offers to members of the association and the wider business community.

### Contact Us

**Laboratory Hotline:** +44 (0) 1254 676074**e:** [enquiries@lpdlabservices.co.uk](mailto:enquiries@lpdlabservices.co.uk)**w:** [www.lpdlabservices.co.uk](http://www.lpdlabservices.co.uk)

LPD Lab Services Limited  
Suite 1, D Building  
Philips Site,  
Philips Road  
Blackburn,  
Lancashire,  
BB1 5RZ