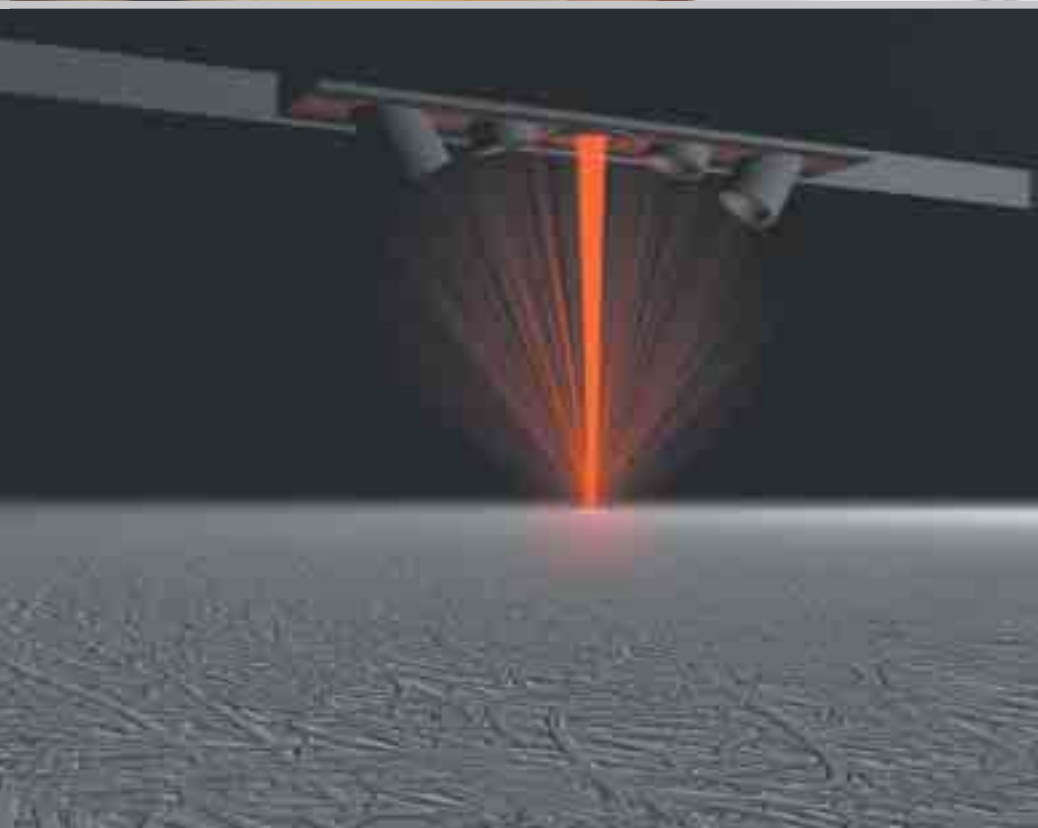


A **uniquely secure** technology that
protects your valuable documents & products



LSA[™] TECHNOLOGY

Highly Secure

Low Cost

No Product Modifications



Revolutionary Technology for Document and Branded Product Security

Most traditional methods for establishing the authenticity of documents and high value products rely on some manufacturing process which is difficult to reproduce. Examples of such processes include adding watermarks, RFID, colour shifting inks and holograms. However, whilst these are difficult to reproduce, they are not impossible to do so.

Using a breakthrough, proprietary and patented technology, the Laser Surface Authentication system (LSA™), launched in August 2005, we are now able to rapidly analyse the surface of any item and read a unique digital serial code.

This code, which has been described as being like a fingerprint or DNA sequence for the item, is unique for every document, card and carton and can be used to uniquely and unambiguously identify the item.

The serial code is naturally-occurring and is not added by any manufacturing steps.

The technology can be applied to any material: Paper, Cardboard, Plastics, Metals, Ceramics and Clothing Labels. As such LSA™ is ideal for the protection of documents, IDs, packaging and products against counterfeiting and fraud.



Technology Advantages

Solves critical inadequacies in Document and Brand Protection solutions.

LSA™ is highly secure to the extent that not even the inventors would be able to crack it since there is no known manufacturing process for copying surface imperfections at the necessary level of precision.

There is no need to modify the item being protected in any way with tags, chips or inks. It is as if documents and packaging have their own unique DNA.

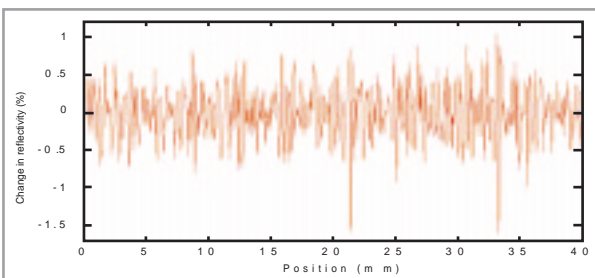
LSA™ provides covert, low-cost, simple-to-integrate solutions into the manufacturing process and is immune to attacks against the security feature itself.

The unique 'fingerprints' are naturally occurring and not issued by any third party codification authority allowing greater security and independence for the user.

Privacy neutral technology. LSA™ authenticates the item without storing personal details of an individual or organisation.

LSA™ can detect not only counterfeit products but also unauthorised products manufactured on genuine production lines.

LSA™ can 'time-stamp' every scanned item which enables any unauthorised manufacture to be classified as counterfeit.



Variation in optical intensity when the laser is swept over a sheet of paper



Technology Benefits

- Low per-item cost: no tags to purchase or become detached.
- No modification to manufacturing process required.
- Can be applied retrospectively to existing documents, cards, packaging or item.
- Extremely high uniqueness: the probability of two naturally-occurring codes matching can be as low as **10⁻¹⁵⁰**.
- No known method to fraudulently copy a code.
- Covert.
- Robust against wear and tear and intentional or malicious damage.
- Privacy neutral.
- The signature can be affixed to documents/surfaces in encrypted bar code form.
- Fast and effective authentication system.
- Scalable solution to meet customers requirements.



Paper's natural fingerprint could be built-in Passport protection





How it works

Professor Russell Cowburn and his colleagues at Imperial College in London examined the fine structure of different surfaces using a focused laser, and recorded the intensity of the reflection in a reproducible format.

The system uses a laser to read the surfaces naturally occurring 'fingerprint'.

This information is securely stored on a database.

An item may be checked/verified by performing a further simple scan which will automatically compare with the existing stored 'fingerprint' data.

This can be achieved in seconds using portable equipment.

The technique has been applied to a variety of materials including paper, plastic metals and coated paperboard packaging and results in clear recognition between the samples.

Recognition continues even after items have been subjected to rough handling, such as submersion in water, scorching, abrasive scrubbing, printing and staining.



Database Requirements and Solution Architecture

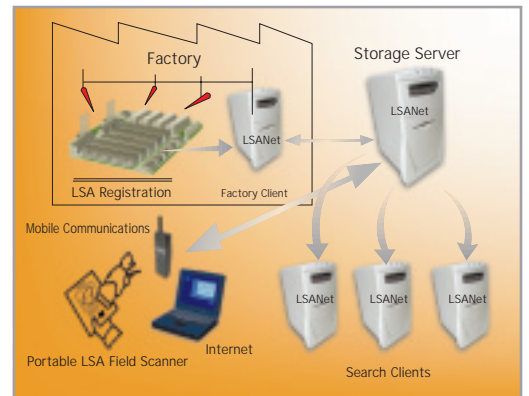
LSANet™ is software platform developed by Ingenia.

LSANet™ can perform one-to-many database searches in less than **5 seconds**.

LSANet™ provides all the software required to turn a standard database application into a fully functioning secure LSA™ database, capable of capturing LSA™ fingerprints at the point of manufacture, storing them safely and then rapidly searching them in response to a query from an LSA™ field scanner.

LSANet™ allows the fingerprints of **100 billion items** to be stored at a low cost.

LSANet™ software automatically generates clear evidence reports.



Accurate & Fast Technology

The uniqueness of the LSA™ measurement is often greater than that of DNA with a **uniqueness of at least one million trillion**. Authentication of an item can take place within **5 seconds** from almost anywhere in the world by accessing the LSANet™ platform.



Solutions

The LSA™ System can be used to guarantee the authenticity of official documents e.g. Passports, Visas, Evidence Certification, ID Cards, Packaging and Goods.

LSA™ can be customised to meet customers' requirements.

LSA™ can be also used:

- In the prevention of terrorism and support of homeland security
- To identify pharmaceutical, tobacco and cosmetics counterfeiting
- To ensure secure supply chain management
- To help detect currency counterfeiting
- Aerospace and automotive component authentication/configuration management
- To crack down on 'grey market'
- To prevent revenue fraud
- Forensic analysis
- Art authentication
- Document security

LSA™ can be implemented as a stand alone system for product authentication or as part of an integrated solution alongside other complementary technologies such as RFID or Biometrics where Total Supply Chain Visibility or increased personal security is a customer requirement.





Company Profile

Founded in 2003 with its headquarters in London, Ingenia Technology Limited is an emerging international company in the authentication and verification of papers, plastics and metals.

Our mission is to create the next generation of security technology and to become the first security solution of choice – particularly with regards to item-level security.

Ingenia Technology Limited has worked in the past with Professor Russell Cowburn through Durham University and, since his move to London, has continued that work with him through Imperial College.

Ingenia Technology Limited

Portman Square House

43-45 Portman Square, London W1H 6HN, UK.

Tel.: +44 (0) 870 351 2584

Fax: +44 (0) 870 351 2585

For further information or enquiries please email to:
info@ingiatechnology.com

www.ingiatechnology.com

