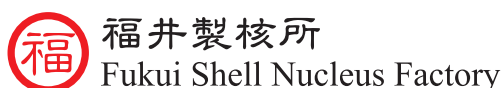


Fukui Shell Nucleus Factory 福井製核所

Traceability and Authenticity from Pearl Seeding to Pearl Jewelry Products 從珍珠養殖到製成首飾的可追溯性和真實性



Background 背景

Fukui Shell Nucleus Factory is a Hong Kong-based company specialized in manufacturing and supplying pearl nuclei and pearl farming operation tools to pearl farms around the world. It also designs and creates mother-of-pearl arts and crafts, and has a local pearl specialty shop. Fukui Shell has a global market share of approximately 30% in pearl nuclei supply, with clients in Australia, Tahiti, Indonesia, Japan, Philippines, the Middle East, and Myanmar. Their clients include some of the largest and the best pearl cultivators in the world.

福井製核所總部設於香港，專門生產珍珠核及珍珠養殖操作工具，供應給世界各地的珍珠養殖場。該公司同時亦設計和製造珍珠的藝術品及工藝品，並於香港擁擠一間珍珠專門店。福井製核所供應的珍珠核佔全球市場大約30%，客戶大多來自澳洲、塔希提島、印尼、日本、菲律賓、中東和緬甸，當中包括一些全球最大型及最高質素的珍珠養殖場。



"We adore pearls. They always bring us an element of surprise. We are always intrigued by them - how they are the epitome of tradition and at the same time, they are always changing with no one pearl that is ever the same. That's what we like about them. They are always unique."

Fukui Shell Nucleus Factory

Challenges 挑戰

As the pearls do not come with detailed information, their value is based on their FIVE visible qualities – luster, size, colour, shape and spots. Two similar-looking pearls may come from two different areas with two different prices. Lacking provenance, unethical salesperson may sell the pearls with false information to the customers. For example, pearls from Indonesia or Myanmar may be sold as pearls from Australia.

Another major issue occurs in the pearl nuclei supply. In order to get a presumably higher quality at a cheaper price, bleaching or whitening agents, and also illegal materials are used. The result is devastating due to the yield of low quality pearls as well as the easily-cracked pearls upon drilling. Pearl cultivators have often wanted to know the origin of their pearl nuclei, but often unable to find out.

In summary, all the problems surround two things – identification and traceability.

若果沒有其他的詳細資訊，要斷定珍珠的價值就基於五個可見條件——光澤、大小、顏色、形狀和斑點瑕疵。兩顆外貌相似的珍珠可會來自不同來源地、價格亦不相同。由於缺乏出處，不法商人可能會於銷售珍珠時提供虛假資料予客戶。例如，將從印尼或緬甸養殖的珍珠假冒為來自澳洲。

珍珠核供應同時亦面對另一個主要問題。為了用最低的價錢取得更高的品質，珍珠亦可能會經漂白劑、增白劑或其他非法物質處理，最後會導致劣質的珍珠在鑽洞時容易裂開，而珍珠養殖員往往難以尋找珍珠核的來源。

總括來說，問題的根源其實來自珍珠的識別和可追溯性。

Implementation Approach 實踐方案

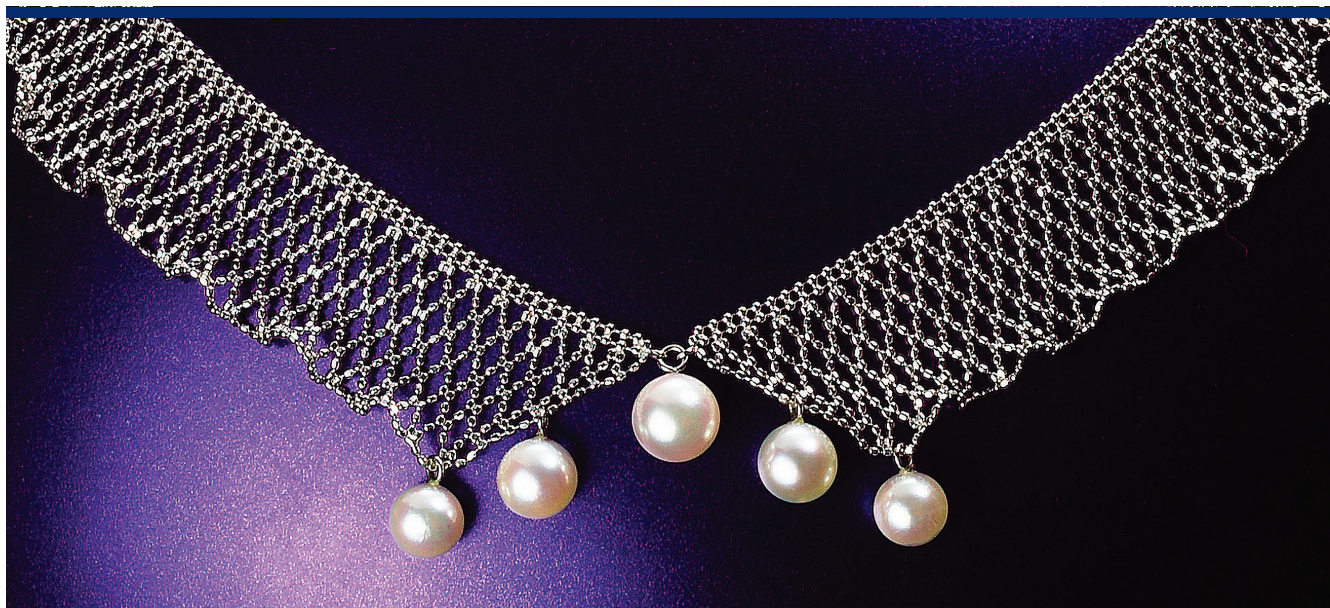
To tackle the challenges of identification and traceability, Fukui Shell embedded an EPC Gen2 RFID chip encoded with a unique EPC number in the “seed” (pearl nuclei). This grants each seed with a unique identifier that carries all the way down the value and supply chain and to the hands of the consumers as a pearl jewelry product.

The globally standardized EPCIS infrastructure provides each pearl's pedigree at any capturing points. Along with the physical grading, EPCIS assures each pearl's identity.

要解決珍珠識別和可追溯性所帶來的問題，福井製核所於每顆“種子”（即珍珠核）嵌入配有獨特的電子產品編碼(EPC)的EPC Gen2 RFID芯片，讓每顆珍珠核帶著一個獨有的標識，由整個價值鏈和供應鏈，到製成珍珠首飾品並到消費者手裡。

在任何採集點，以全球標準為基礎的追溯網絡EPCIS會提供每顆珍珠的履歷。在分別珍珠的等級時，EPCIS就能夠保證每顆珍珠的身份。





Key Benefits 效益

- 提供每顆珍珠獨有的「身份證號碼」
 - 提供每顆珍珠的來源
 - 鼓勵工業標準化
 - 打破物理屏障，讓行業與客戶連接
 - 利用可靠資訊提高消費信心
 - 改善供應鏈和庫存管理
 - 將人與珍珠的聯繫拉近
 - 避免客戶購買假冒的珍珠產品
 - 利用資訊及通訊科技創造新商機
-
- Provide each pearl with a unique “ID number”
 - Provide provenance of each pearl
 - Encourage industrial standardization
 - Connect industry with clients without physical barrier
 - Raise confidence level with trusted information
 - Improve supply chain and inventory management
 - Connect people with the pearls closer
 - Protect clients from buying counterfeited pearl products
 - Create new business opportunities using information and communication technologies

Existing Value for Each Pearl 珍珠的現有價值

- 美觀
- Beauty

New Values for Each Pearl 珍珠的新價值

- 獨有識別
 - 可追蹤及追溯
 - 可作產品驗證
 - 標準化
-
- Unique identity
 - Track and trace
 - Authentication
 - Standardization

Hong Kong EPCIS (ezTRACK) 香 產品電子代碼訊息服務 (縱橫網)

Worldwide EPCIS 環球產品電子代碼訊息服務

EPC Data Interchange / Event Query

產品電子代碼數據交換/訊息擷取



WHAT? 什麼物件?

Pearl information (origin, farm, luster, size, colour, shape, spots, quantity)
珍珠的資料 (產地、養殖場、光澤、大小、顏色、形狀、斑點瑕疵、數量)

WHEN? 何時?

Exact time the nucleus left the factory, they are planted, harvested, auctioned, certified, distributed and retailing
珍珠核離開工廠、種植、收成、拍賣、取得認證、分銷和送往零售商店的實際時間

WHERE? 哪裡?

Each actual location of reading points from nucleus manufacturing factories, farms, dealers, certification agencies, design & jewelry production, jewelry stores
從珍珠核製造工廠到農場、經銷商、認證機構、設計和首飾生產及首飾店每個閱讀點的實際位置

WHY? 為什麼?

Commissioning, planting, harvesting, distribution, shipping, delivery, receiving, etc.
測試、種植、收割、銷售、發貨、送貨、收貨等。

查詢及傳送價值鏈的
電子譜系資訊
Query & return
value chain
e-pedigree
information

Pearl Nucleus Factory 珍珠核



1. Implant EPC Gen2 tag in the pearl nuclei at the nucleus factory encoded with serialized EPC numbers for identification
2. EPC information upload
1. 在珍珠核工廠將配有序列化EPC碼的EPC Gen2標籤植入珍珠內以作識別
2. 上載產品電子代碼資訊

Pearl Farms 珍珠養殖場



1. Enquire nucleus genuine information
2. Provide cultivation information (plantation & harvesting)
1. 取得珍珠核的真實資訊
2. 提供養殖資料 (養殖及收成)

Pearl Dealers 珍珠經銷商



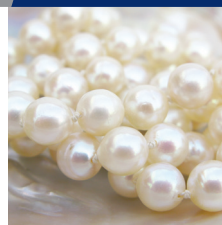
1. Enquire pearl cultivation and genuine information
2. Stock-in and stock-out details
1. 取得珍珠養殖及真實資訊
2. 入庫和出庫的詳細資料

Pearl Certification Agents 珍珠認證代理商



1. Enquire pearl nucleus genuine information
2. Provide certification information
1. 取得珍珠核的真實資訊
2. 提供認證資訊

Jewelry Stores 珠寶店



1. Enquire pearl nucleus genuine and certification information
2. Stock-in and stock-out details
3. Inventory information
1. 取得珍珠核的真實資訊及認證資訊
2. 入庫和出庫的詳細資料
3. 庫存資料

Consumers 消費



1. Enquire authentication information for pearl jewelry products
1. 取得珍珠首飾的真實資料

Please contact us for more information 請聯絡我們了解詳情:

GS1 Hong Kong 香 貨品編碼協會

香港灣仔告士打道160號海外信託銀行大廈22樓
22/F, OTB Building, 160 Gloucester Road, Wanchai, Hong Kong
T (852) 2861 2819 | F (852) 2861 2423 | E info@gs1hk.org
www.gs1hk.org

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