

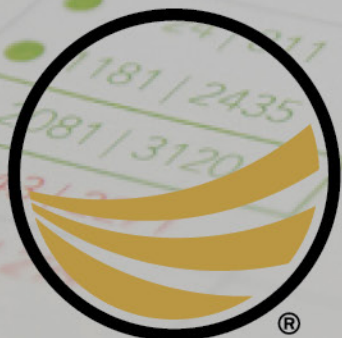


OCEAN TOMO

# 全球专利在线竞价交易市场

## LOT #154

**Efficient Battery Cooling Systems for  
Thermal Management of Electric Vehicles**



OCEAN TOMO

# BID-ASK™ MARKET

# Lot 154 Portfolio Origin & Toolkit Strategy

## General Origin

The patents have their origin in a big German car supplier (Behr) who was acquired by another supplier (MAHLE).

Following the acquisition, the strategy to offer **System components for Li-Ion-batteries especially** cooling technologies for batteries of Electric Vehicles (EV) was no longer pursued, hence parts of the patent portfolio were transferred to some of the original inventors.

## Toolbox for Li-Ion battery cooling

The original applicant planned to create a toolbox for the cooling of Li-Ion batteries:

- For different cell types (pouch vs hardcase)
- Battery architectures (automotive vs off-highway)
- Unit quantities (large series vs small series manufacturers and niches)
- Coolant vs refrigerant media

# Ocean Tomo Bid-Ask Market Lot 154

## Portfolio Information

### Overview & Main Characteristics

**Patent Family 1** (EP2476151B1, US9112208B2, JP5542209B2, CN102576831B): System patent for modules;  
Granted and valid in DE, US, JP, CN

**Patent Family 2** (EP247461B1 , CN10498601B, JP560335B2):  
core element connection cooling element esp. for pouch cells;  
Granted and valid in DE, FR, CN, JP

**Patent Family 3** (EP2476160B1, US9083009B2, CN102576916B, JP5604519B2): Core element for battery structure system with cooling;  
Granted and valid in DE, FR, US, CN, JP

**Patent Family 4** (EP2026387B1):  
Core element arrester cooling pouch cells;  
Granted and valid in DE, FR

**Patent Family 5** (EP2497145B1, JP5810422B2, CN102771004B):  
Core element for flexible cooling (coolant or refrigerant) of hardcase but also  
pouch cells for large series up to small series  
Granted and valid in DE, FR, CN, JP

# Lot 154 Technology Innovation

## Patent Family 1:

(EP2476151B1,  
US9112208B2,  
JP5542209B2,  
CN102576831B)

Module interface represents a new approach for modularization. Modularization well suitable for small quantities with high number of variants; applicable for all OEM

## Patent Family 2:

(EP247461B1,  
CN10498601B,  
JP560335B2)

Compensation element represents a new approach for tolerance compensation for cooling plates; pouch cell cooling, applicable for all topologies and OEM platforms

## Patent Family 3:

(EP2476160B1,  
US9083009B2,  
CN102576916B,  
JP5604519B2)

Integrated bottom cooling represents a new approach by integration for light and low cost bottom cooling plate (omission of an additional cooling top element); applicable for all topologies and OEM platforms

## Patent Family 4:

(EP2026387B1)

Conductor cooling represents a new approach positioning of cells for cooling; pouch cell cooling, applicable for all topologies and OEM platforms, rather for smaller volumes

## Patent Family 5:

(EP2497145B1  
JP5810422B2  
CN102771004B)

Flat tube cooling represents a new approach for light, compact and efficient cooling by means of flat tubes with microstructures, applicable for all topologies and OEM platforms

# Lot 154 Technology Readiness Levels (TRL)

## Patent Family 1:

(EP2476151B1,  
US9112208B2, JP5542209B2,  
CN102576831B)

Module interface has **TRL 6-7**, must still be developed to series maturity

## Patent Family 2:

(EP247461B1 , CN10498601B,  
JP560335B2)

Balancing element **TRL 7-8**, still has to be developed for series production

## Patent Family 3:

(EP2476160B1,  
US9083009B2,  
CN102576916B,  
JP5604519B2)

Integrated bottom cooling has **TRL 9**; adoption for the respective series application; application examples can be found in series productions of several OEMs

## Patent Family 4:

(EP2026387B1)

Conductor cooling has also **TRL 9**; technology is expected to be used in series production

## Patent Family 5:

(EP2497145B1  
JP5810422B2  
CN102771004B)

Flat tube cooling has also **TRL 9**. Application examples can be found in series productions of several OEMs

Welcome to the Ocean Tomo Bid-Ask™ Market, the public voice brokerage platform for patent transactions.

欢迎来到 Ocean Tomo Bid-Ask™ Market, 首个通过传统经纪人公开在线进行专利交易的全球化市场平台

For assistance using the platform, contact [Bid-Ask@OceanTomo.com](mailto:Bid-Ask@OceanTomo.com)

平台使用帮助, 欢迎联系 [Bid-Ask@OceanTomo.com](mailto:Bid-Ask@OceanTomo.com)

- Bid 竞价
- Ask 要价
- In Market (Lot Will Sell) 待拍品
- Price Spread 价差
- Sold 成交
- Transaction Pending 待拍品

### DOCUMENT PROCESSING SYSTEM

用户界面

LOTS: 64 专利拍品数量 SOURCE CODE 源代码

9 ASSETS 专利数量

### DIGITAL DISPLAY SYSTEM

数字内容访问

LOT: 65 专利拍品数量

4 ASSETS 专利数量

### OCEAN TOMO BID-ASK™ MARKET

OCEAN TOMO全球专利在线竞价交易市场

TOUR THE MARKET 市场一览

### INDUSTRIAL INTERNET SECURITY & INSPECTIO

一种工业互联网安全和检查的

LOT: 66 专利拍品数量 SAL LEA

21 ASSETS 专利数量

LOT NUMBER 拍品编号	DATA ROOM 数据服务室	PTO 知识产权局	NICKNAME 拍品名称	REPRESENTATIVE PATENT 专利	PRIORITY DATE 优先权日期	EVENT DATE* 活动日	BID USD/RMB* 竞价	BID EXP. DATE 竞价截止日	ASK USD/RMB* 要价	ASK EXP. DATE 要价截止日	PRIC SPR 价差
03-ZHA-74-18		US	Data Processing 一种数据处理方法	US9047283	1/29/10	3/28/18			\$3,800,000 ¥ 24,062,360.00	9/28/18	

The Ocean Tomo Bid-Ask™ Market (OTBA) was built to further enhance Intellectual Property (IP) liquidity and transaction transparency. OTBA serves a broad community of active buyers and sellers, providing a platform to purchase or sell patents and patent applications globally.

This market is supported by Ocean Tomo Transactions and affiliate international voice brokers.

建立OTBA的目的是进一步促进IP资产流通性,提高了IP交易透明度。买卖双方通过 OTBA平台来购买或者出售全球专利权以及专利申请权, Ocean Tomo交易团队和旗下全球经纪人为平台提供线下提供服务支持, 以此建立活跃买卖双方的全球专利交易市场。



OCEAN TOMO®

## Contact

Olivia Becker

Chief Business Development Officer – Transactions

Ocean Tomo, LLC | Chicago, IL

E: [obecker@oceantomo.com](mailto:obecker@oceantomo.com)

O: +1 747.277.9337