



WELCOME

CBMM & Partners
Materials Technology
E Mobility & FIA Smart Cities Workshop

Hong Kong March 8 -9 2019



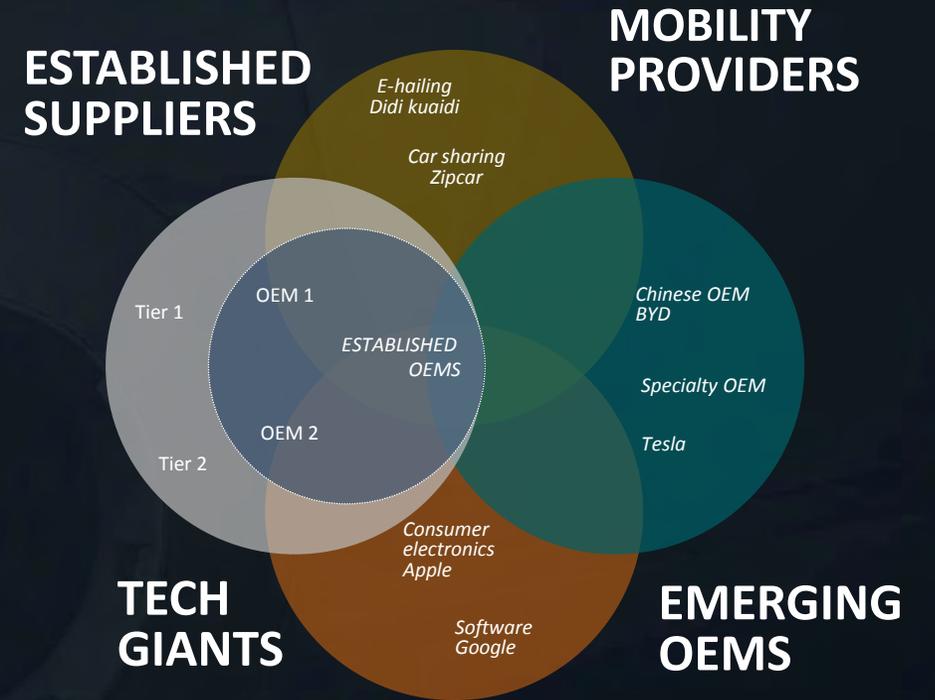
WHY MOBILITY IS SO IMPORTANT

World is changing
fast and the way
people move is
changing too

MOBILITY MATTERS

Territories and new business models

-  **Urbanization**
-  **Available on demand**
-  **Sustainability**
-  **Sharing Economy**
-  **Mobile technology**



OEMs COMPETE IN A COMPLEX MARKET LANDSCAPE



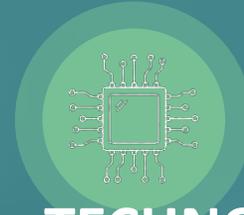
GOVERNMENT



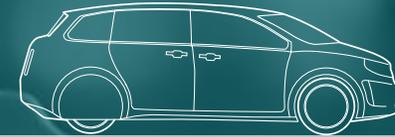
CONSUMER



URBANIZATION



TECHNOLOGY

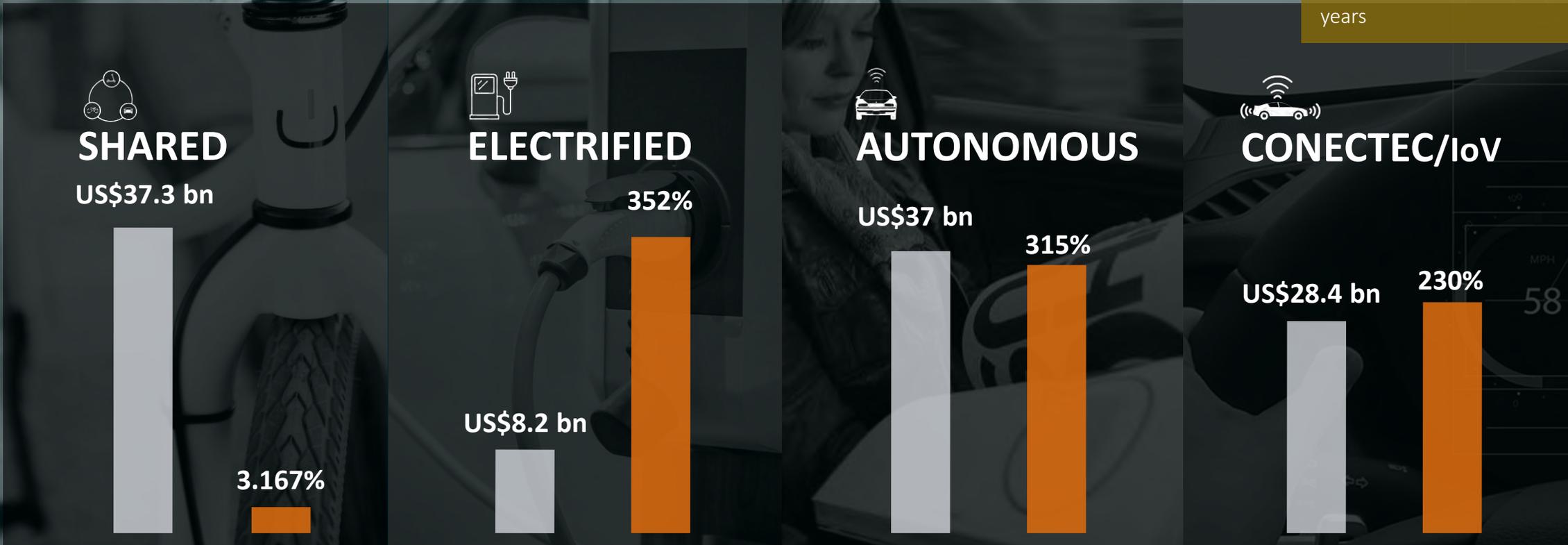


change drivers for mobility

THE FOUR MAIN MOBILITY TRENDS

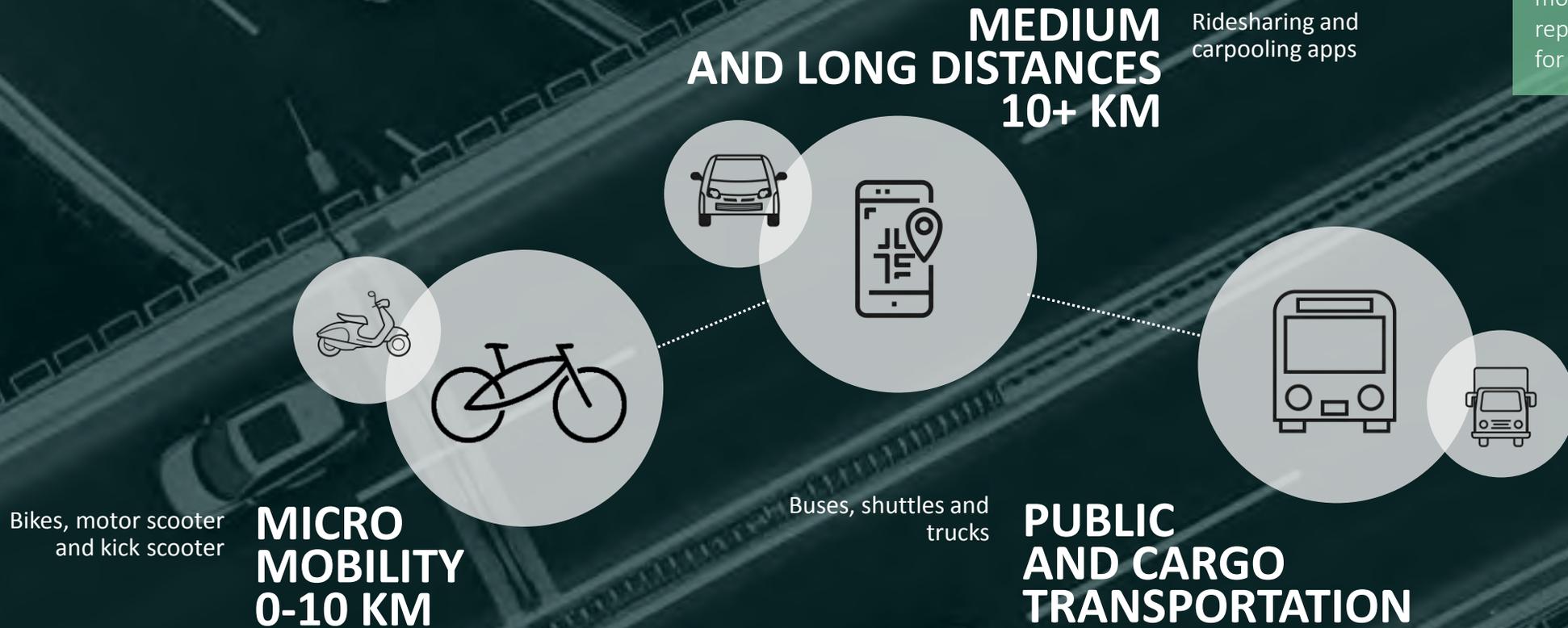
■ Total amount Invested since 2010
■ Rise in the annual average investment

There are 4 main trends in the mobility sector attracting significant investments in recent years



Source: <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/the-automotive-revolution-is-speeding-up>

THESE FOUR TRENDS ARE RELATED



With many transportation modes, therefore they all represent opportunities for Niobium

THE MARKET ANSWERS



SHARED

Stronger, harder wearing parts

Safer and lighter cars

Lighter cars means improved fuel efficiency, range and less emissions

Focus on Lightweighting



ELECTRIFIED

Better batteries with higher performance and charging time

Increases charge efficiency and reduce electrical loss

High strength battery case for safety and weight reduction



AUTONOMOUS

Increased safety, precision, mechanical robustness and efficiency in power electronics



CONECTEC/loV

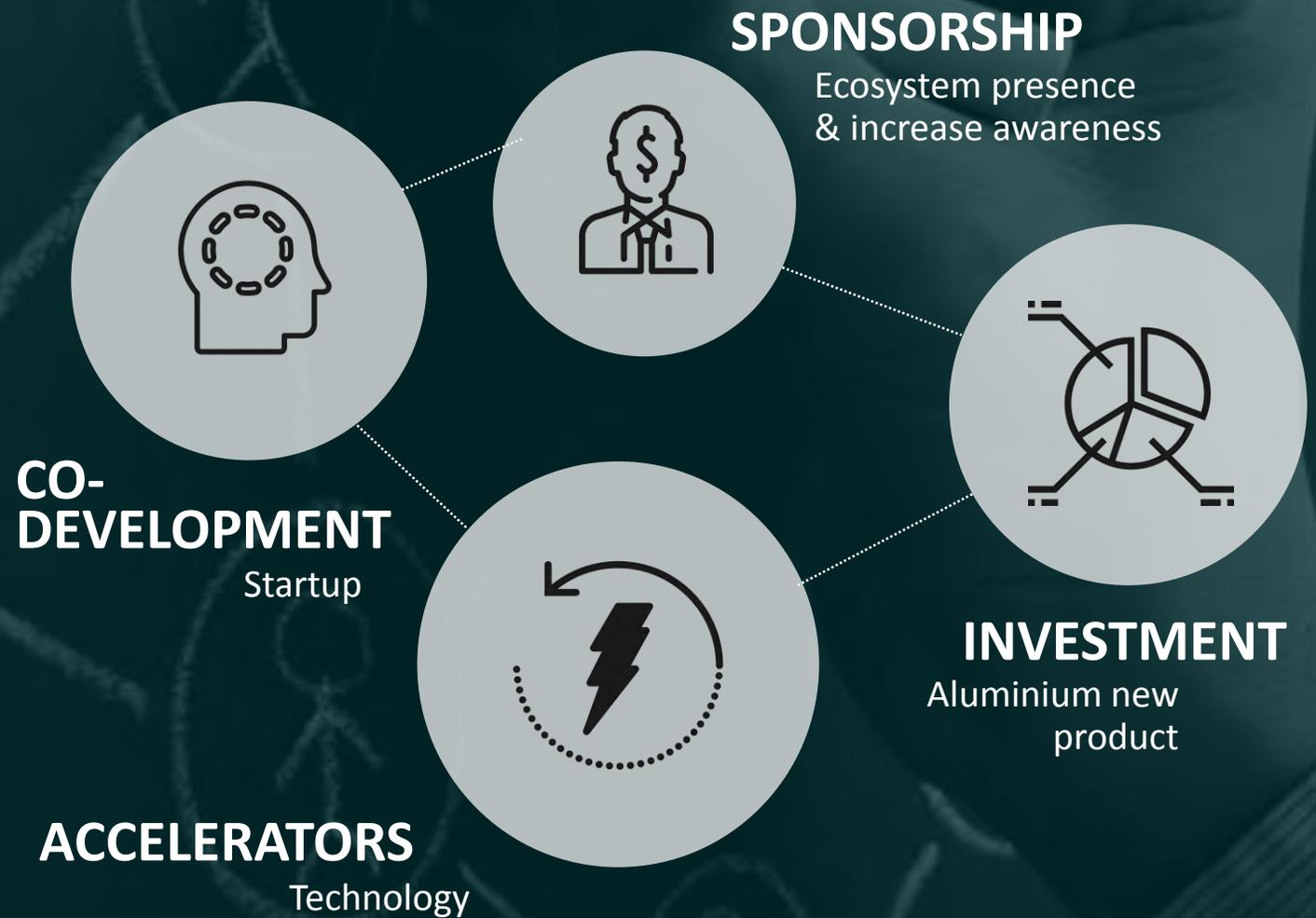
Sensors with better electronics performance without using harmful materials as lead for instance

Source: <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/the-automotive-revolution-is-speeding-up>



WHY PARTNERSHIP IS SO IMPORTANT

TYPES OF PARTNERSHIP DIVERSIFICATION



PARTNERS PRESENTING

CBMM & Partners Materials Technology & E Mobility Workshop



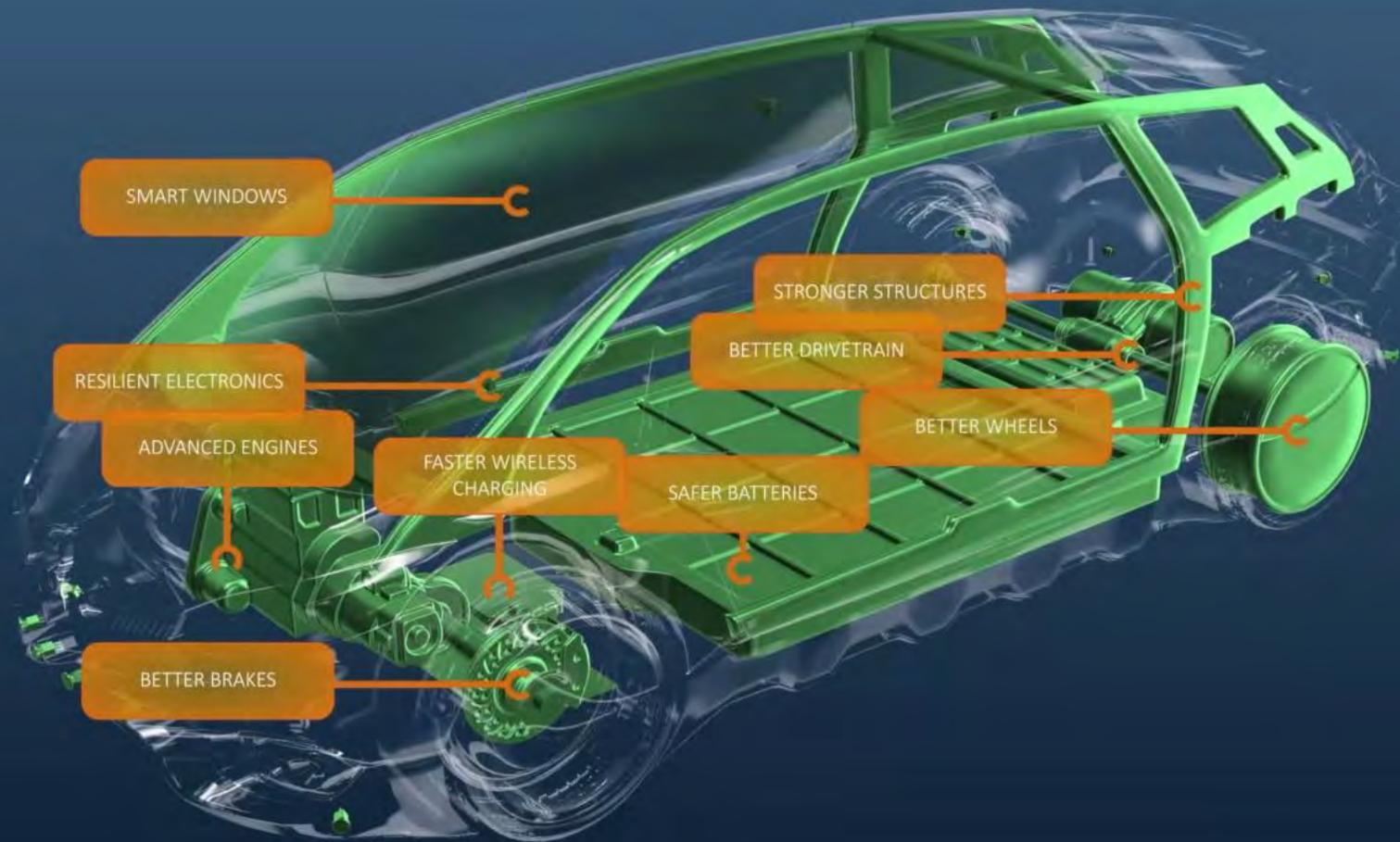
Luoyang Zhonghe Amorphoud Technology Co., LTD





ADVANCED MATERIALS NIOBIUM PLAYING A KEY ROLE

○○○○○



SMART WINDOWS

STRONGER STRUCTURES

RESILIENT ELECTRONICS

BETTER DRIVETRAIN

ADVANCED ENGINES

FASTER WIRELESS
CHARGING

SAFER BATTERIES

BETTER WHEELS

BETTER BRAKES



CBMM

CBMM &
FORMULA E
AN
IMPORTANT
PARTNERSHIP



A GROWING RELATIONSHIP

CBMM & FORMULA E RELATIONSHIP 2017 – 2021

TITLE SPONSOR IN URUGUAY, ITALY, MEXICO CITY, BERLIN + PARTICIPATION IN HONG KONG, FRANCE AND USA

FORMULA E SEASON 4 & 5 AWARDS SPONSOR

ANNOUNCED AS LAUNCH PARTNER TO EXTREME E

ONGOING PARTNERSHIP WITH FORMULA E CHAMPION - LUCAS DI GRASSI

CBMM | Niobium **Nb**

FORMULA-E
CHAMPIONSHIP
DEL ESTE E-PRIX 2018
TAG Heuer
Niobium
CBMM

**BUILDING BRAND
AWARENESS
& INTEREST
IN NIOBIUM
TECHNOLOGY**





CBMM's commitment to technology

- Currently 210 active R&D and technical projects worldwide
- On average CBMM spends 2% of revenues on R&D programmes

CBMM & PARTNERS WORKSHOP PROGRAMME

SUBJECT EXPERTS IN:

MOBILITY, ELECTRIC VEHICLES, ADVANCED MATERIALS TECHNOLOGY, NANOCRYSTAL MATERIALS & SMART CITIES

AN INTERNATIONAL MIX OF:

STRATEGIC CONSULTANTS, OEMs, TIER 1 SUPPLIERS, TECHNOLOGY & INNOVATION SPECIALISTS

AN INTERACTIVE FORMAT TO:

SHARE INSIGHTS, CHALLENGE & EXPLORE POSSIBILITIES, PROGRESS RELATIONSHIPS





**UNIQUE VIP
ACCESS TO
ELECTECH EXPERTS**
EXPLORING TECH
INNOVATION IN ACTION

MEDIA
CENTRE
ABB FORMULA E
KIA DHE



**HIGH-PERFORMANCE
COMPETITION**
EXCITING,
ENTERTAINING & FUN



FORMULA E SEASON 5

THE EXCITEMENT IS ELECTRIC



ABB FORMULA-E

FIA FORMULA-E CHAMPIONSHIP

CBMM
Niobium **N5**

**CBMM NIOBIUM
MEXICO CITY
E-PRIX 2019**

RACE SPONSOR

SATURDAY 16 FEBRUARY