

NEIL BOWLES,
HEAD OF SMART MOBILITY

ARTEMIS TECHNOLOGIES

Seattle Ferry Conference 2023

Born from the America's Cup

Artemis Technologies was formed in 2017 from the Artemis Racing America's Cup Challenge where boats are tested to their limits and push the boundaries of sailing.

Over £250m invested in maritime R&D.

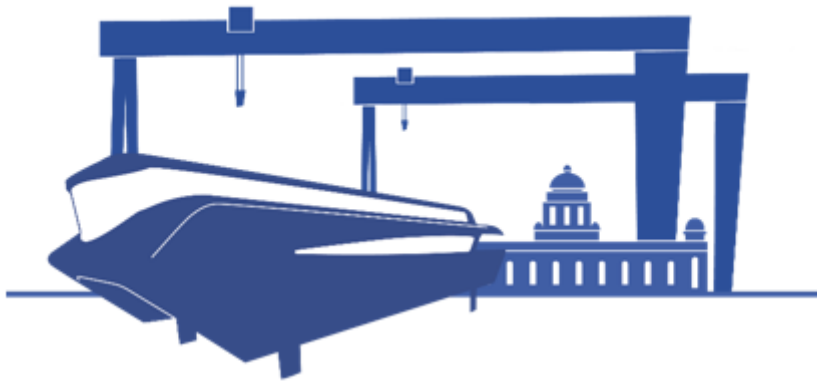
World-leading Digital Twin capabilities.





Designed and manufactured by our team, right in the heart of Belfast Harbour's iconic dockyard.





BELFAST MARITIME CONSORTIUM

September 2020, BMC awarded \$39M government funding to deliver a high-TRL, viable zero-emission passenger ferry and demonstrate technical and commercial viability

Design, Engineering & Manufacturing

Research & Education



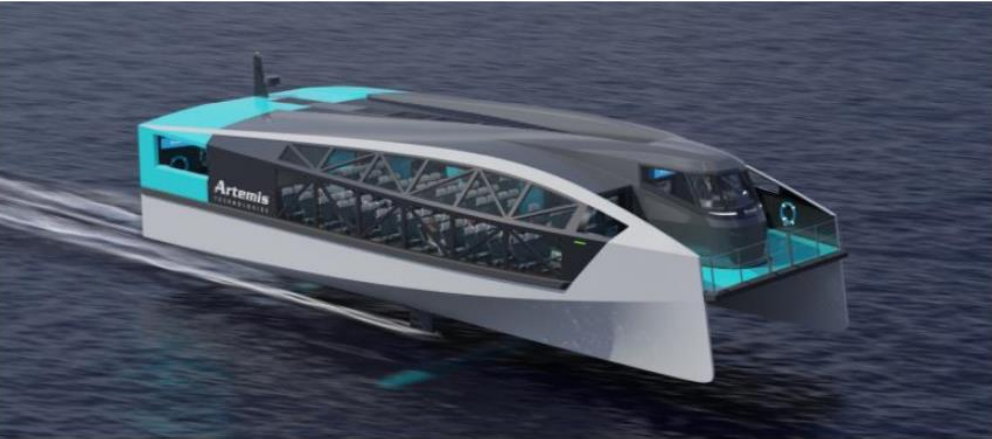
Infrastructure & use case

Not-for-profit/support

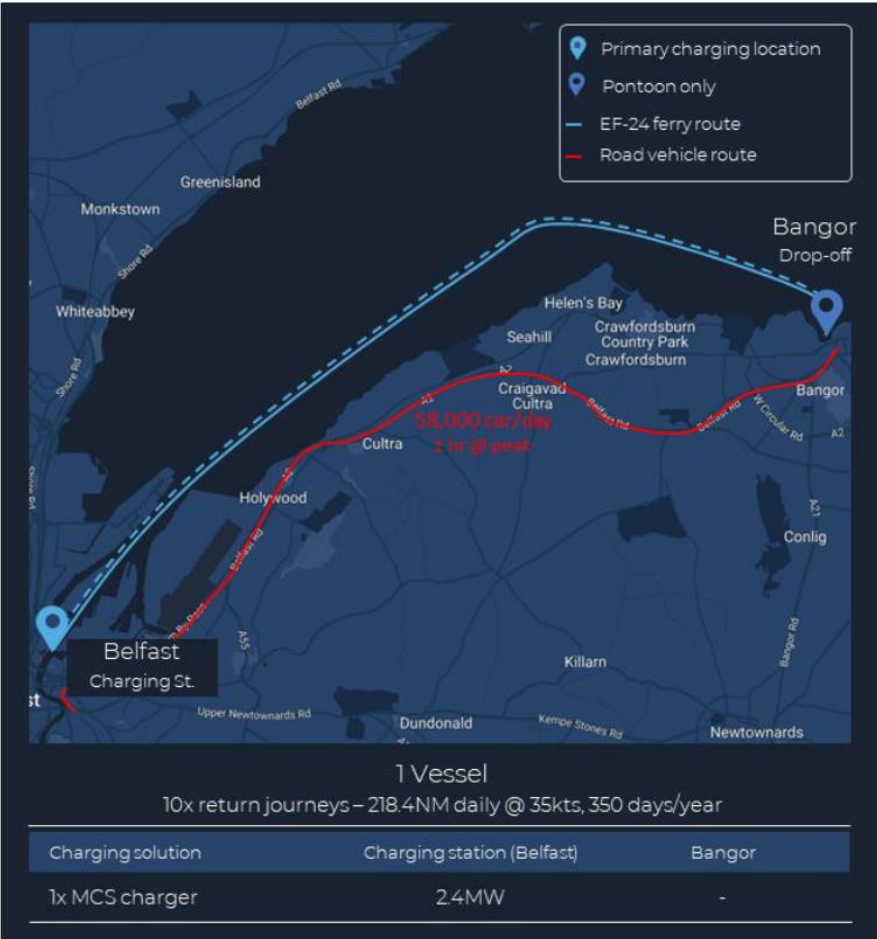
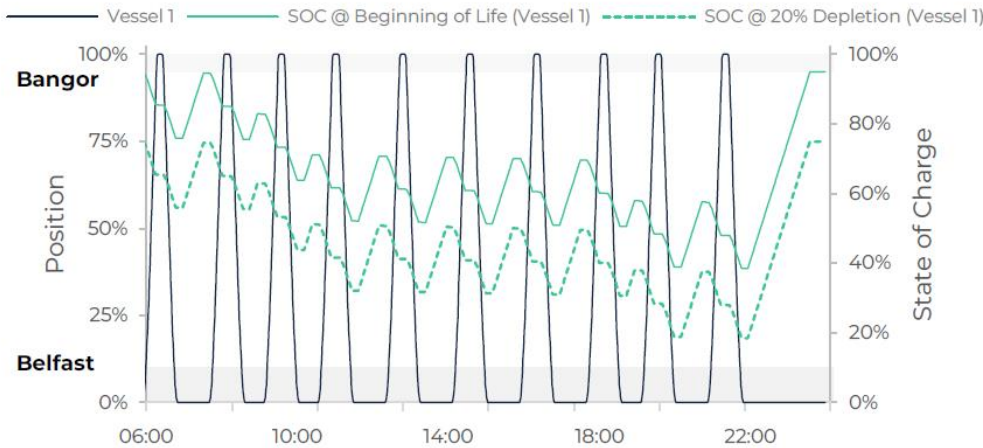


Pilot Scheme Scope

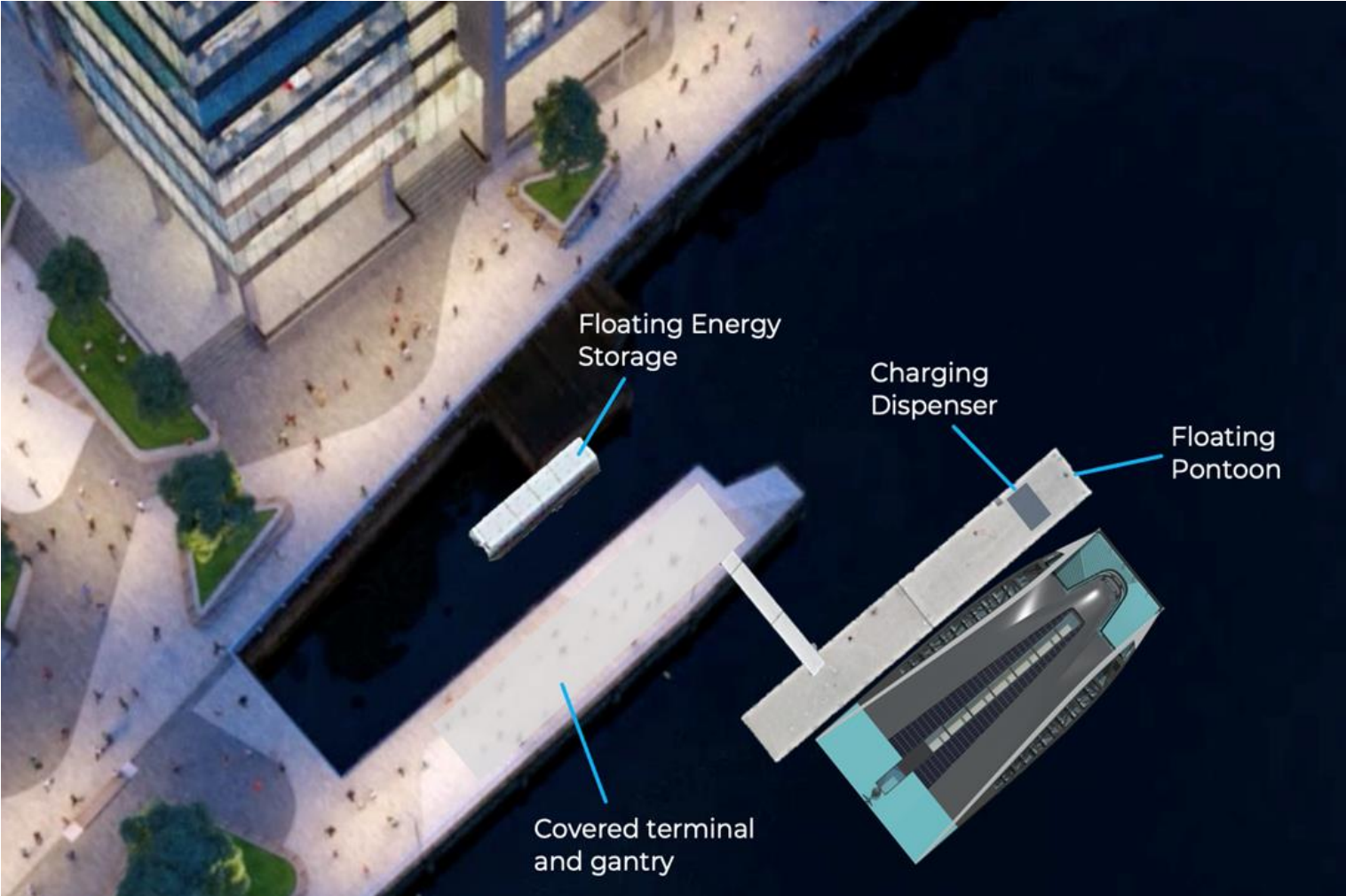
The pilot scheme will see the introduction of an EF-24 Passenger zero-emission electric foiling ferry capable of carrying 150 passengers and supporting multi modal transport, providing a ferry service between Belfast and Bangor in Q4 2024. First deliverable – Proof of Concept EF-12 electric foiling 12m



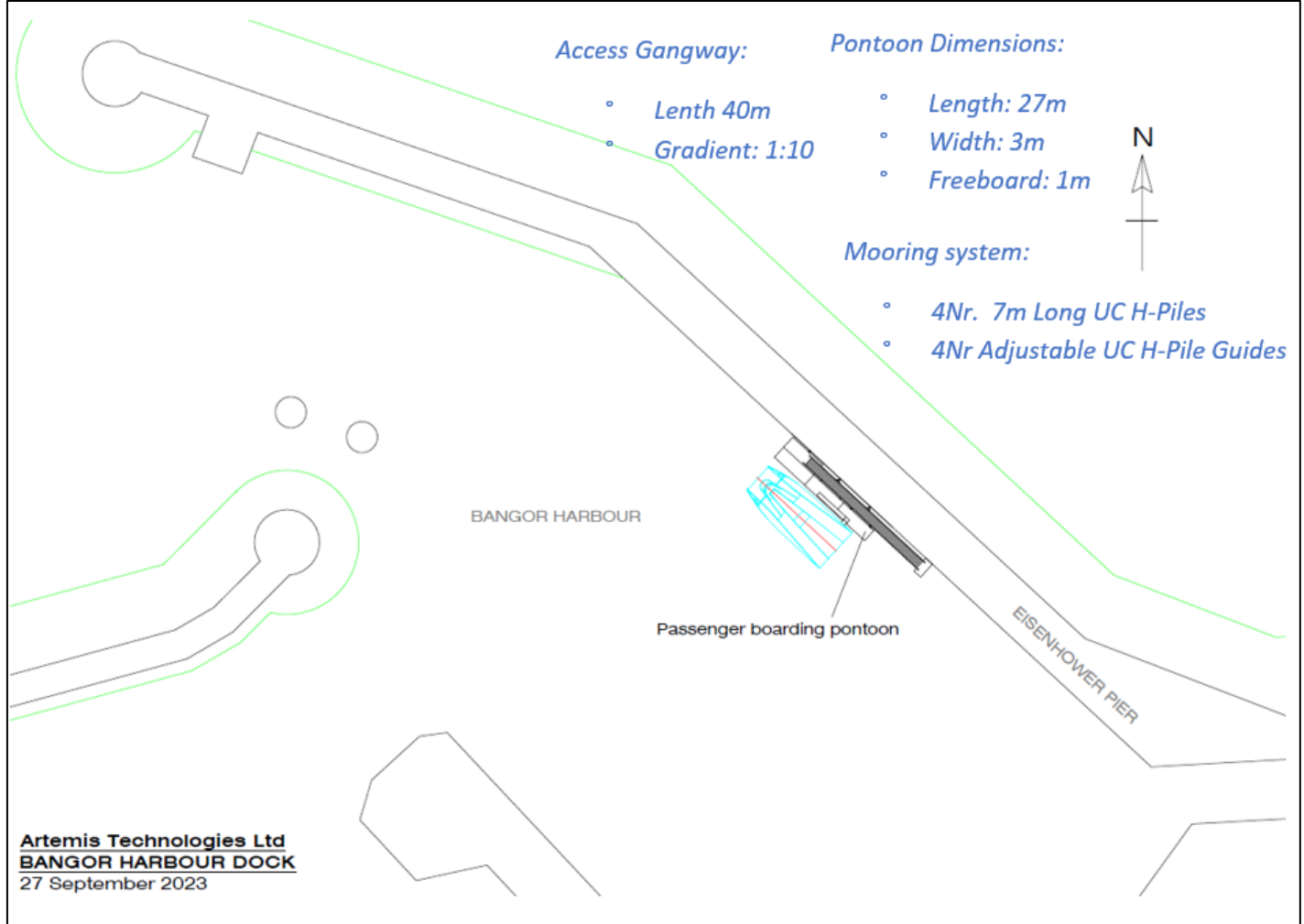
▲ EF-24 Passenger Ferry



Pilot Scheme Operations



Belfast City Centre



Bangor City Centre

Benefits



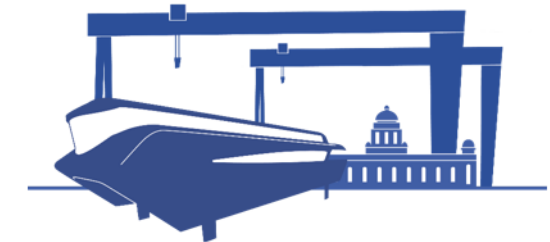
Aim:

- Decarbonisation of maritime vessels
- Exploiting foiling technology to allow high-speed zero emission operation with viable commercial range
- Consideration of infrastructural elements to ensure system-level viability



Strength in Place

- Composite Research and Manufacturing Technology (primarily from Aerospace hub)
- Maritime infrastructure and capability (primarily from shipbuilding heritage)
- Councils and Energy providers keen to explore zero-carbon commuting



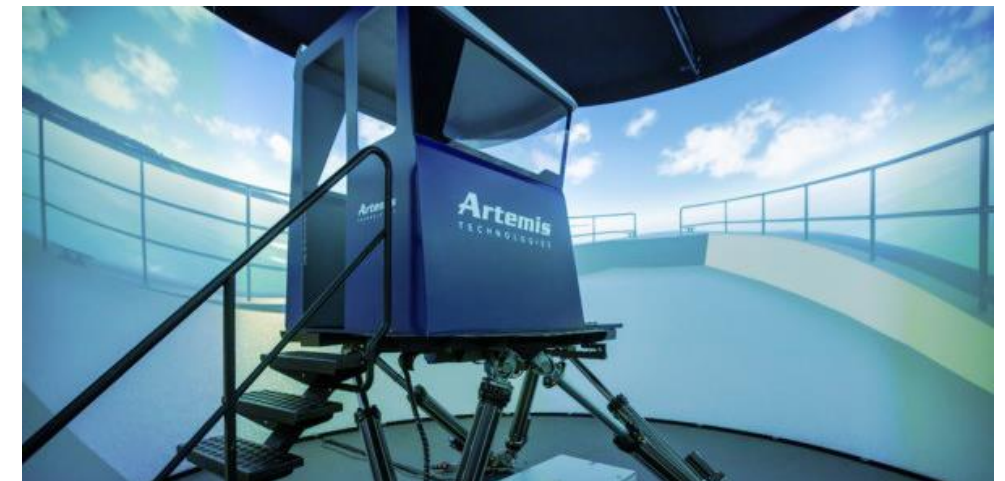
BELFAST MARITIME CONSORTIUM

10 Work packages covering market positioning (for a modal change), design and engineering, manufacturing of prototypes, testing of prototypes to validate viability

Challenges

- Design & build a foiling electric 24m, 150 pax ferry
 - Consortium members with expertise
 - COLAV – Collision Avoidance system
- Class Approval and Code
 - 12m vessel world’s largest coded foiling electric vessel
 - DNV and UK MCA HSC code underway
 - 2.5m HS class approval, capable of operation up to 4m HS
- “Seeing is believing”
 - EF-12 Pioneer and sister ship Seahorse on water in April 2022
 - Live two-boat testing program – no wake
 - State of the art marine simulator
- Viable Range
 - Wanted to design vessel capable of city harbor ferry operations as well as open-water services

	Gasoline Sister Ship Seahorse	Artemis eFoil Pioneer
Energy consumption at 17 knots, 0.1m Hs	38.0 kWh/Nm	6.53 kWh/Nm
Energy consumption at 17 knots, 0.6m Hs	52.1 kWh/Nm	6.92 kWh/Nm



Up to 2.9 MW charging

Megawatt charging is needed to achieve full commercial potential of a single vessel and sufficient margin for schedule flexibility.



Standardised plug

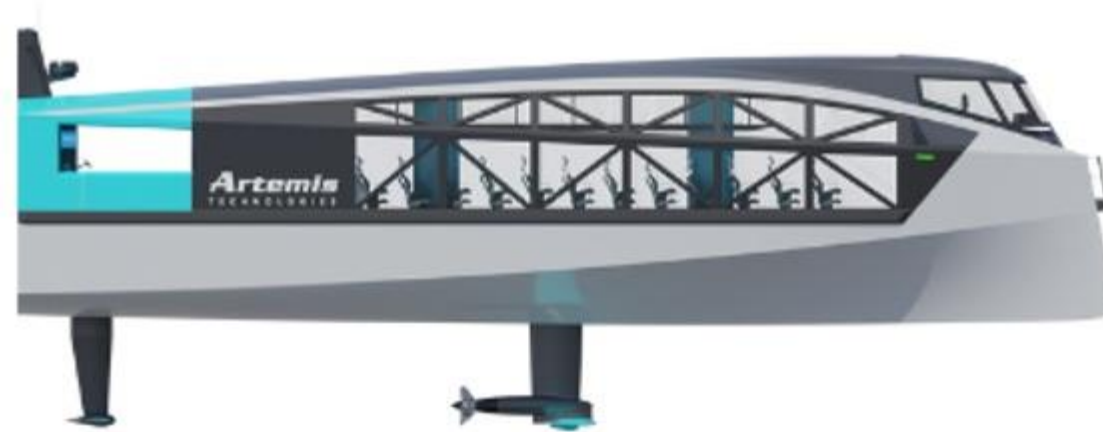
CharIn’s MCS standard will help bolster the electrification of maritime and enable to recharge other electric vessel/vehicles.



Battery Electric Storage System BESS reduces grid connection CAPEX and enables fast DC charging in grid constrained areas.

EF-24

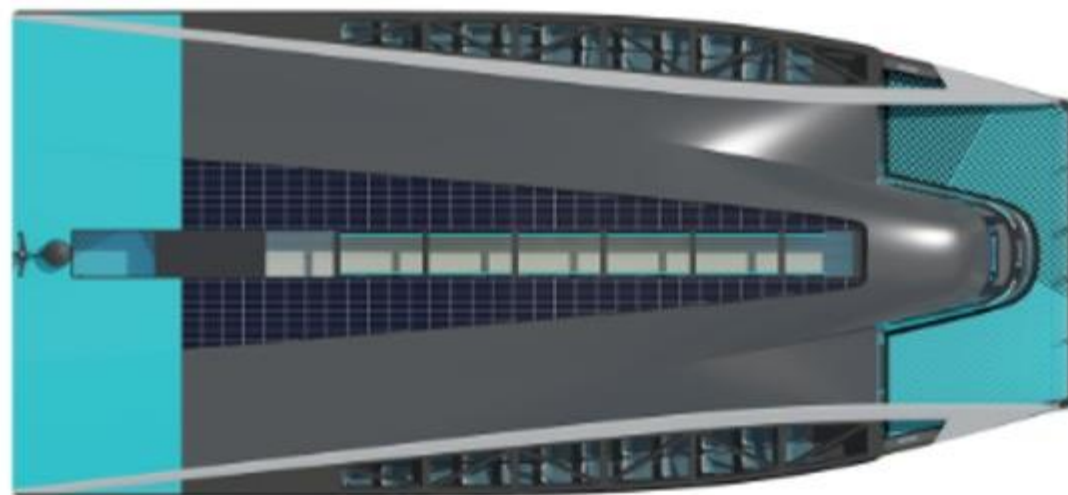
Passenger



Enabling smart mobility across the globe

A high-speed passenger ferry that provides a cost-effective public transport solution that helps address congestion, air and noise pollution.

Designed in accordance with 2000 HSC code.



Principle Dimensions

Length Overall (m)	24
Beam Overall (m)	10.3
Draft (m)	3
Air Draft (m)	6.5
Lightweight-Displacement (t)	56.4
Crew / Bridge Seated Capacity	3
Passengers	150

Performance

Top Speed (kts)	36
Cruise Speed (kts)	32
Foiling Range (nm)	87

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THANK YOU