

New, sustainable
corrosion protection of
aircraft grade aluminium

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Intro

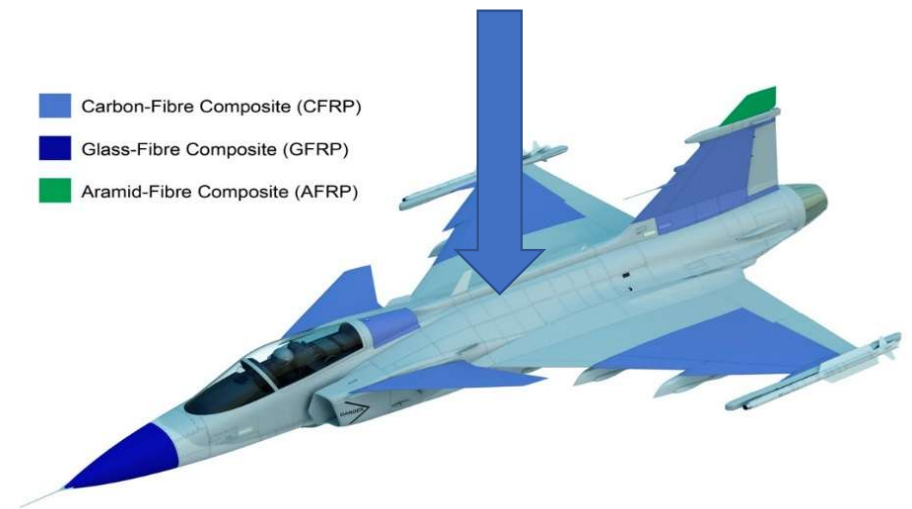
Anodizing

Sealing

Result

Summary

Future



- Carbon-Fibre Composite (CFRP)
- Glass-Fibre Composite (GFRP)
- Aramid-Fibre Composite (AFRP)

- 80% Aluminum
- Cu-containing alloy
- Susceptible to corrosion
- Surface treatment



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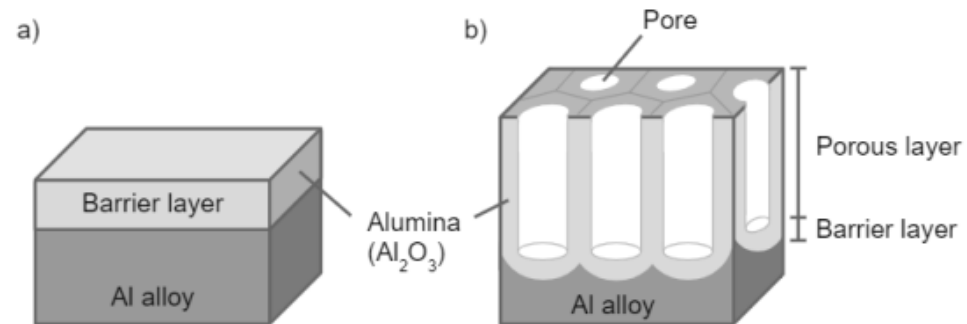
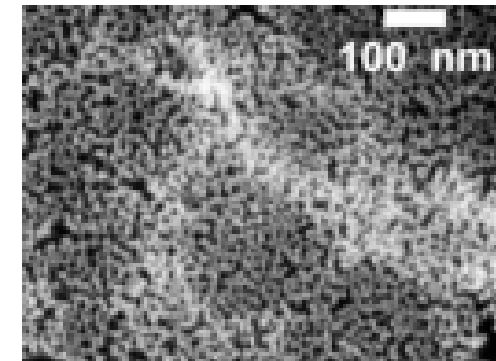
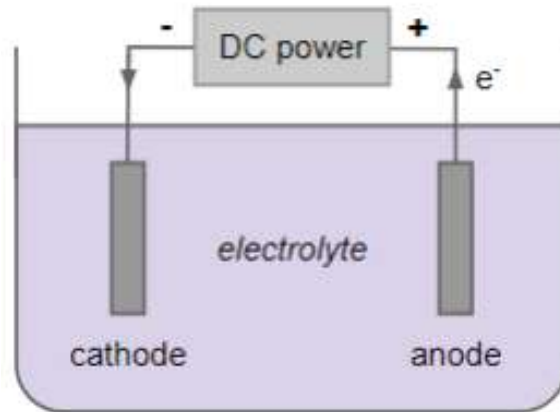
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Tartaric-Sulphuric acid

anodizing

Chromic acid

anodizing



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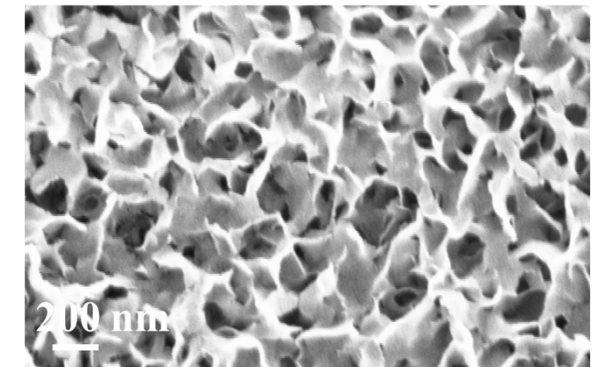
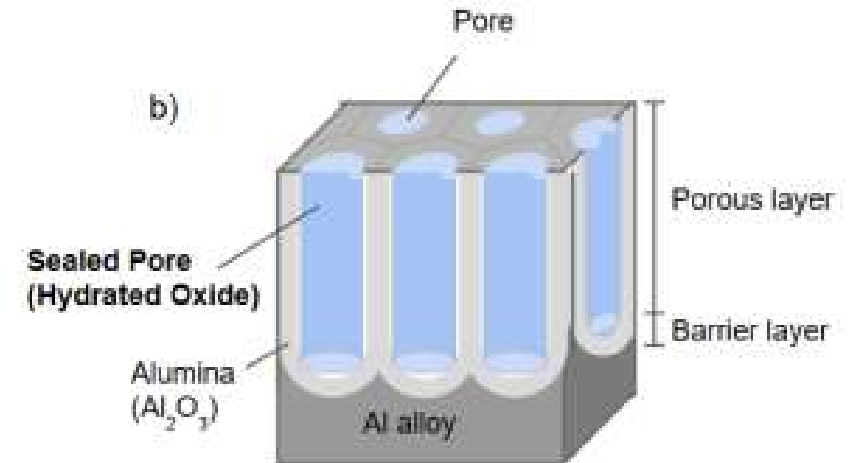
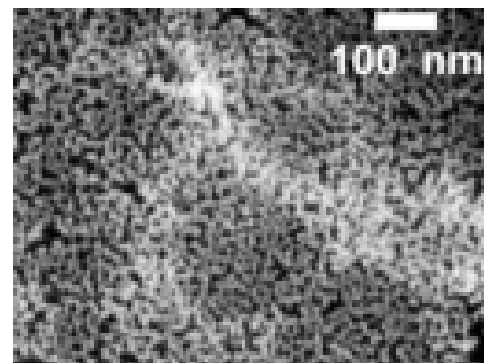
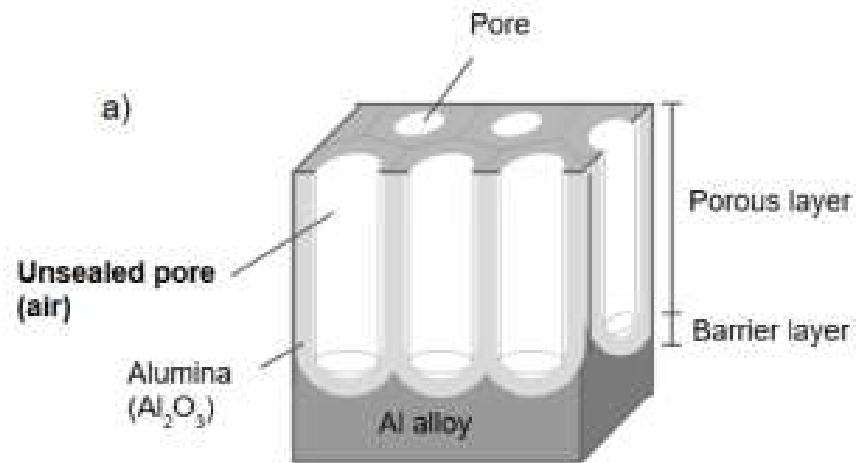
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- Hot-water treatment, with or without sodium chromate
- Closes pores
- Improved corrosion protection
- No obvious replacement for chromium

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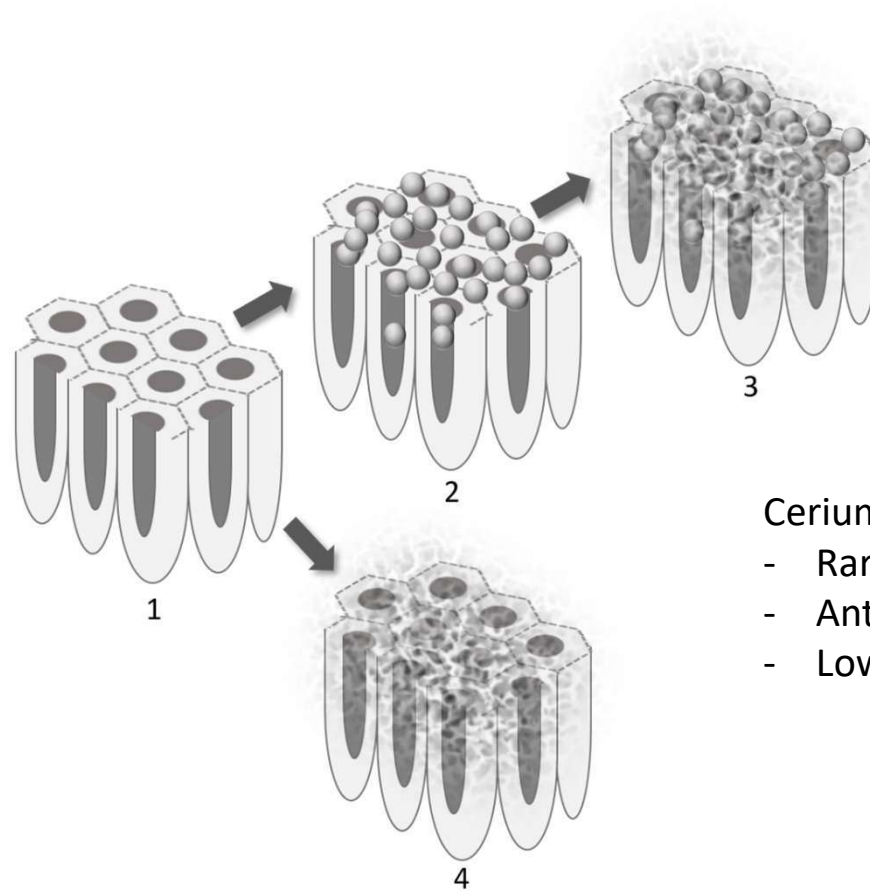
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Cerium:

- Rare-earth material (however not rare)
- Anti-oxidant behaviour
- Low toxicity

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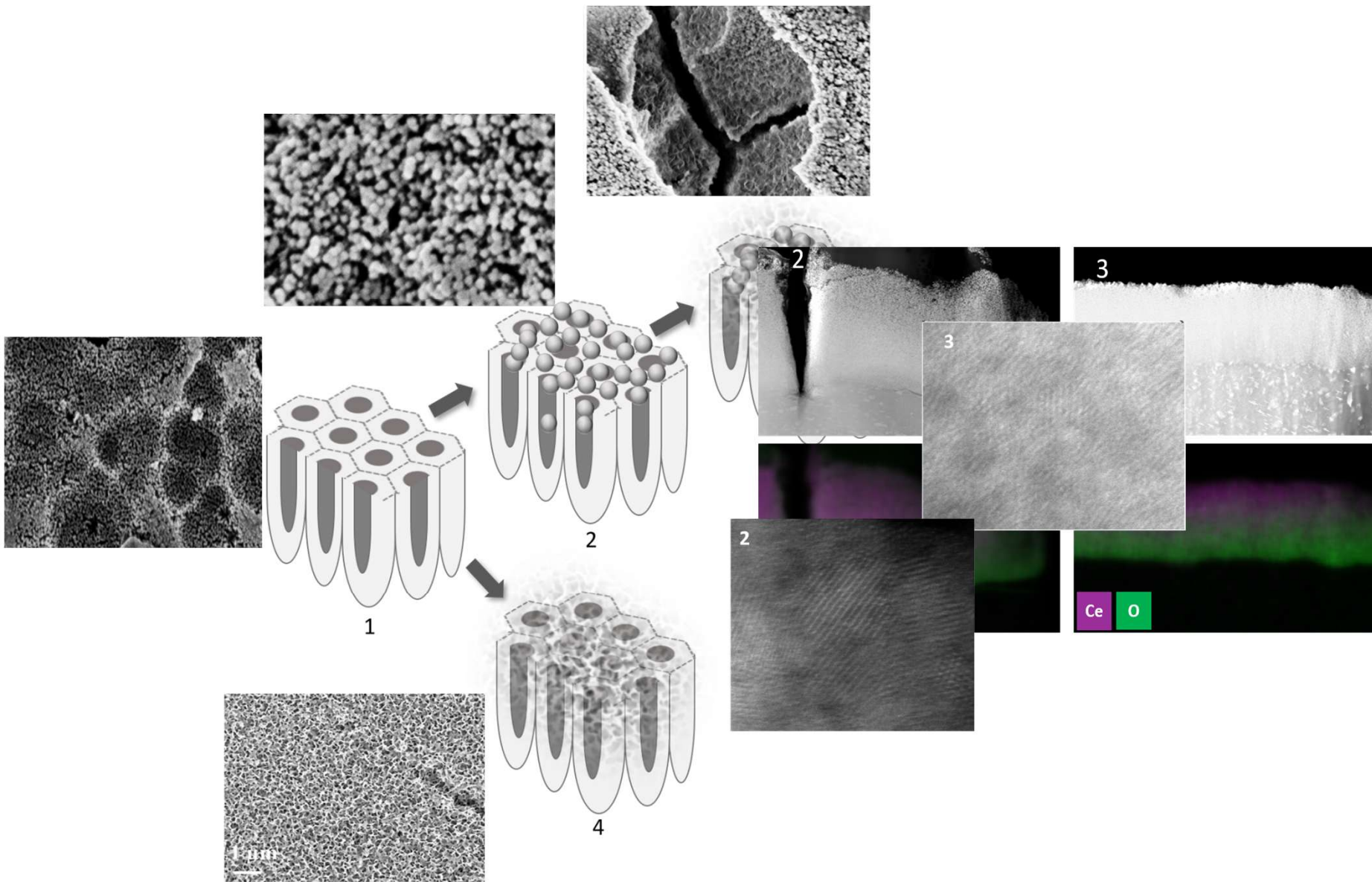
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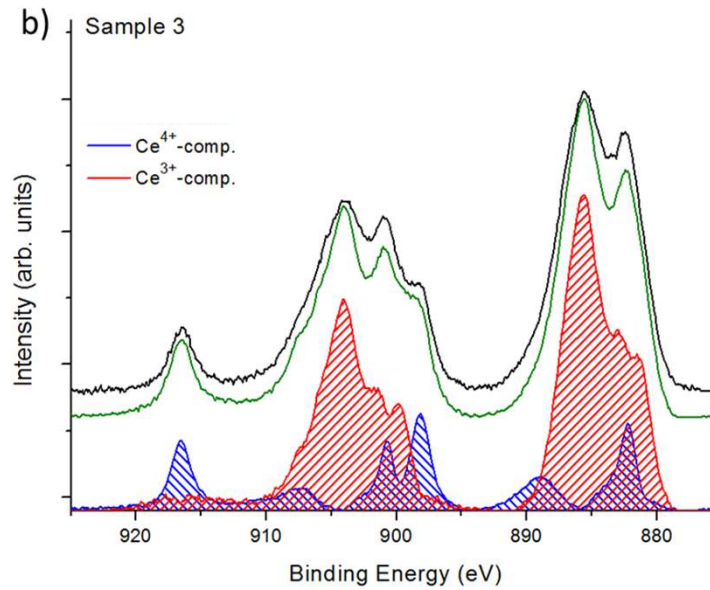
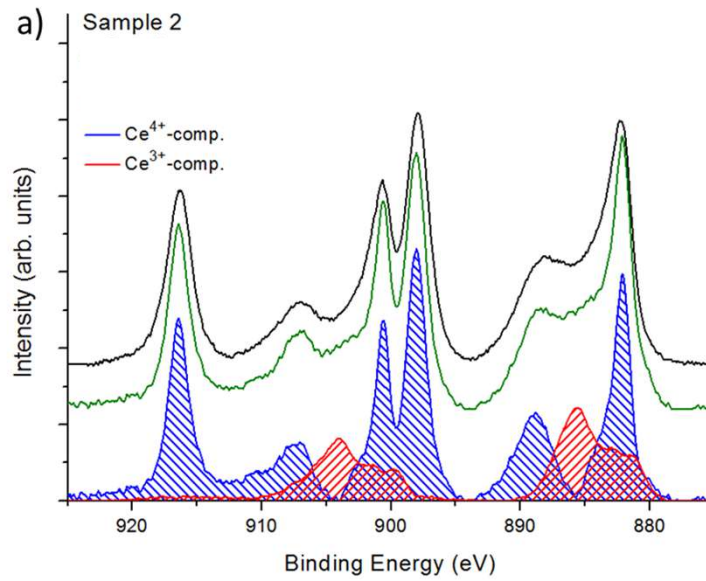
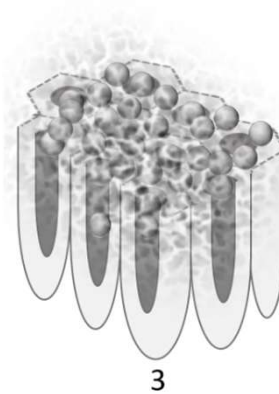
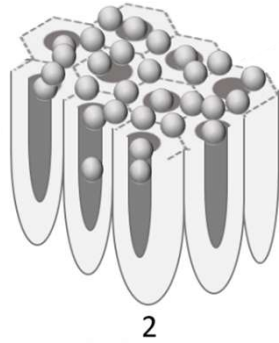
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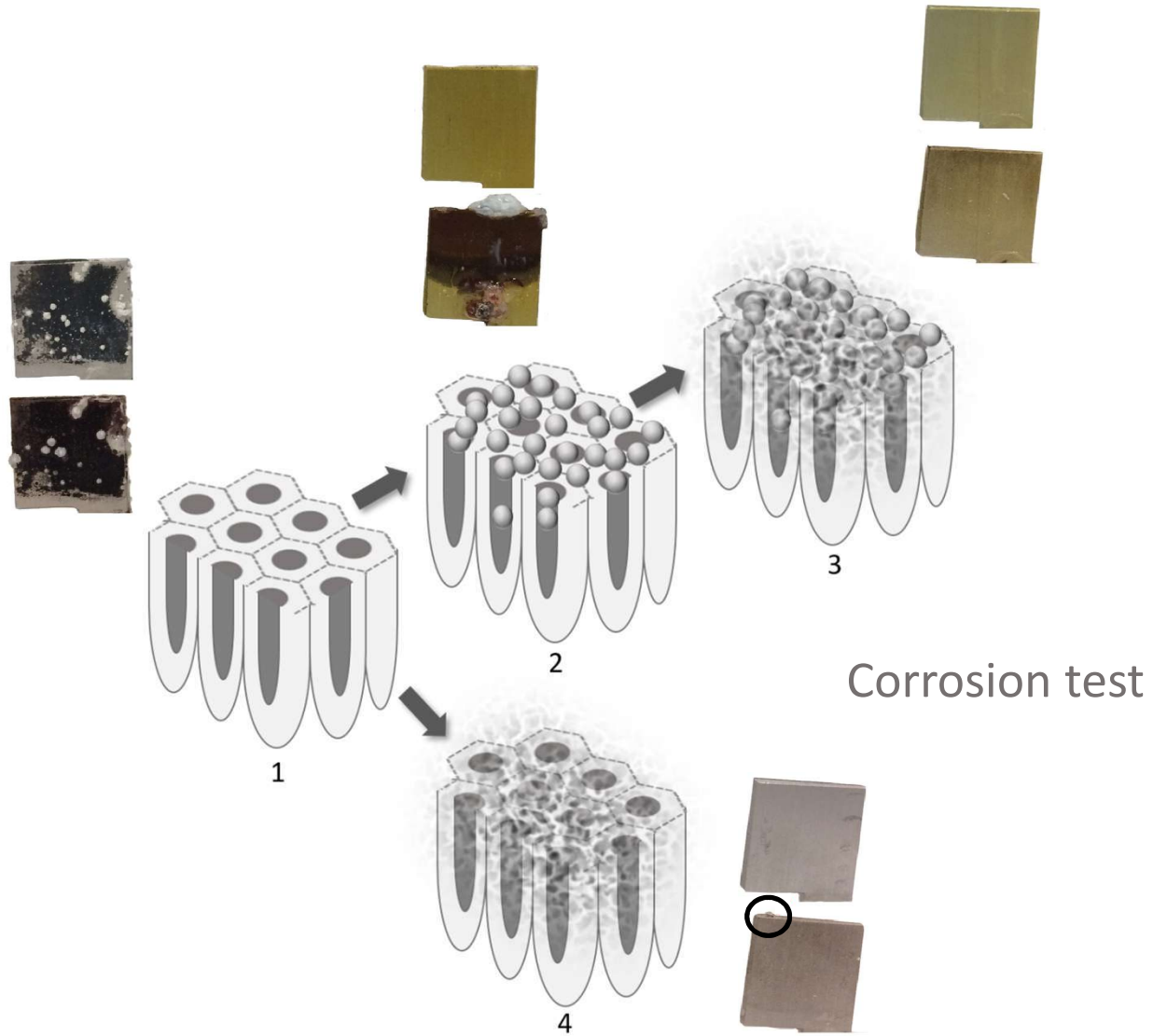
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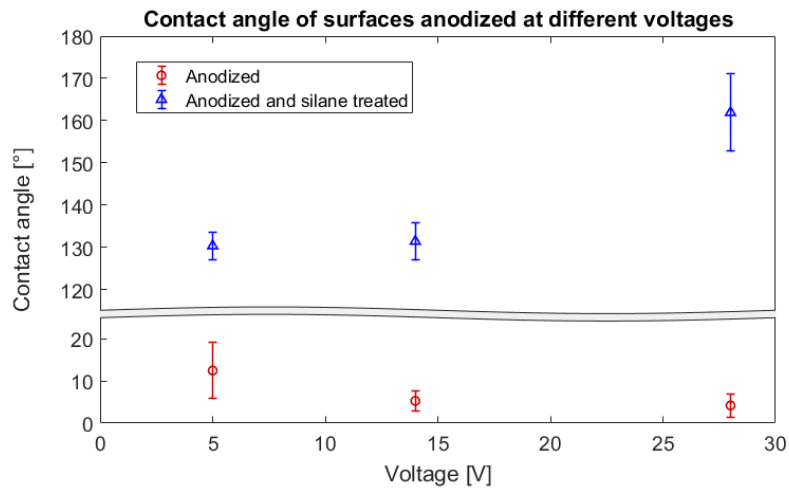
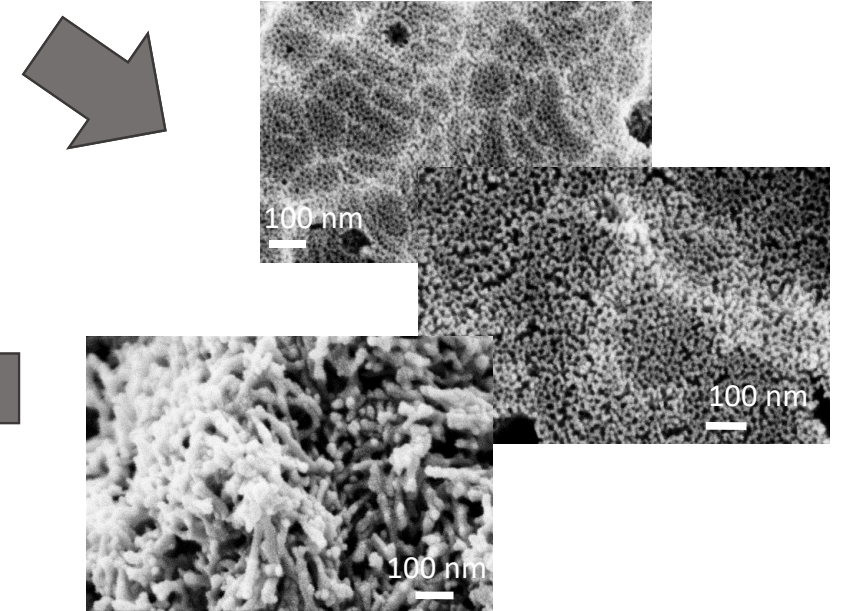
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- **Successfull sealing**
- **Anti-oxidant material -- > corrosion resistant surfaces**
- **Super hydrophobic surfaces**

Future

- Multifunctional coating for aeronautical applications
- Reduced ice-adhesion, improved corrosion resistance and self-cleaning



Acknowledgements

VINNOVA
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SAAB



Questions