

Afrensning af kulstofholdigt snavs med nanogeler

Innovativ metode til konservering af kalkmaleri



Det Kongelige
Akademi

Arkitektur
Design
Konservering



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Fanefjord Kirke



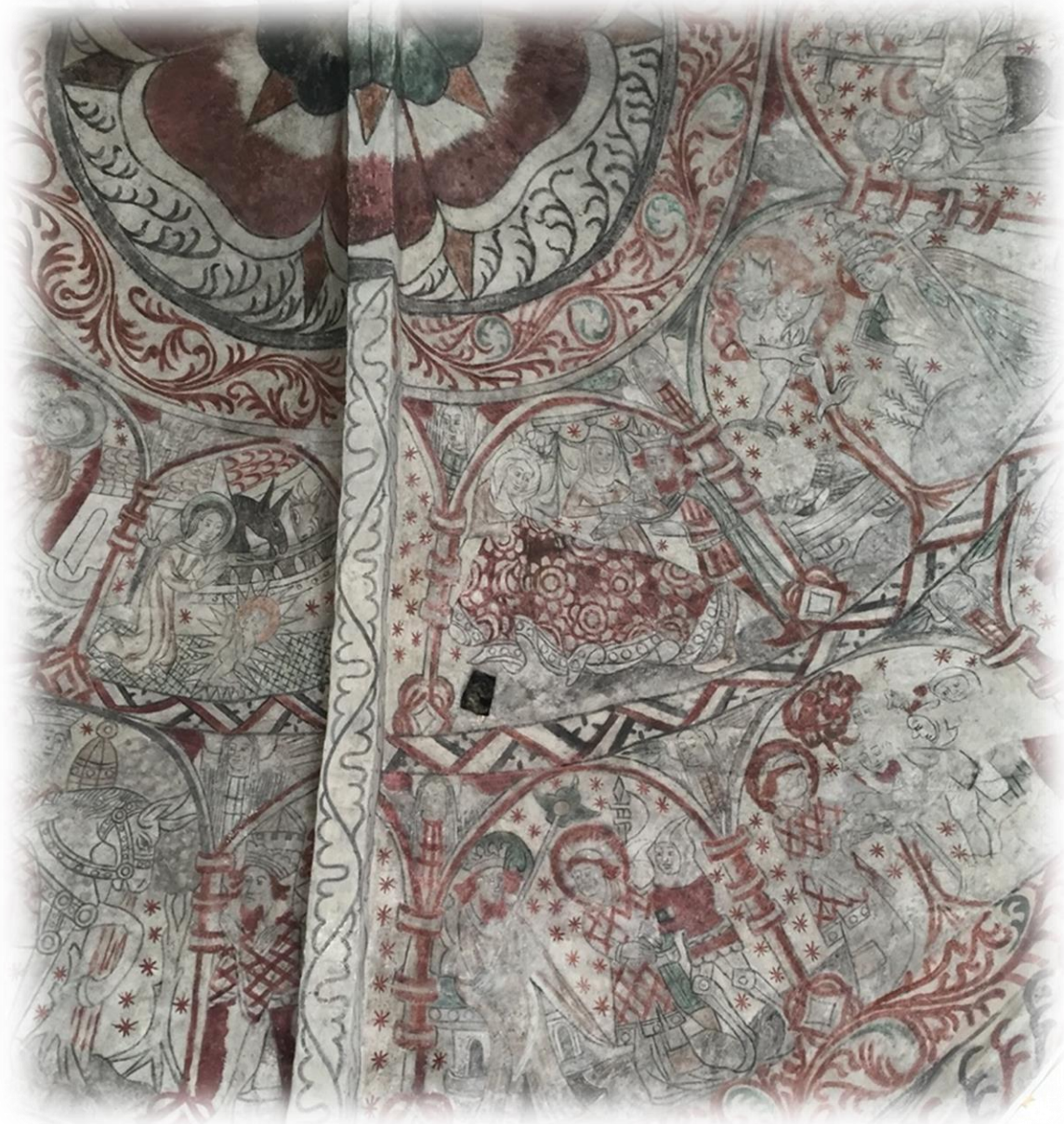
Kakkelovn i Gudum Kirke 1918



*”En ældre Ovn,
der til tider virkede som en
Vulkan i Udbrud og fra Hatten
spyede Røg og Ild og Aske ud i
Kirkerummet, blev i 1909
erstattet med et godt nyt
Varmeapparat”*



Afdækning af kalkmaleri, Skamstrup Kirke 1908



Skamstrup Kirke

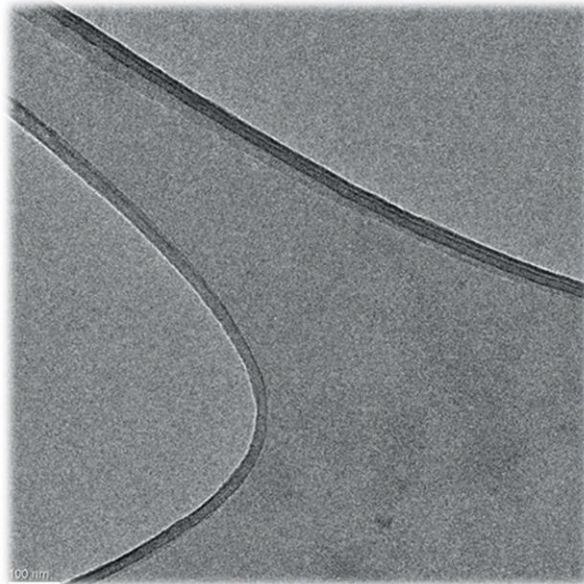


Kongsted Kirke

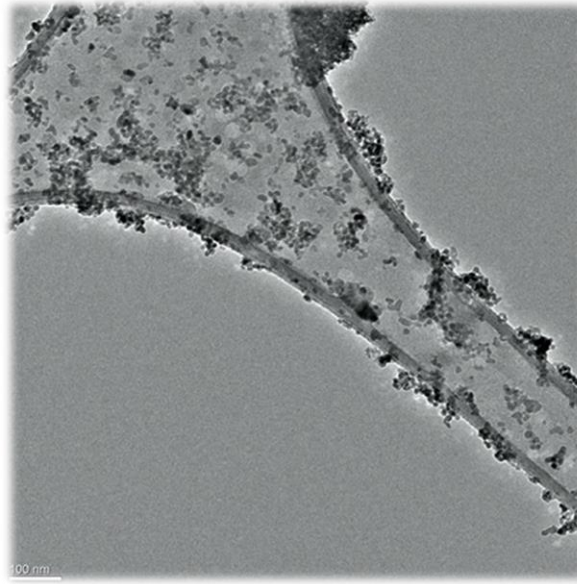
Transmission elektronmikroskopi (TEM)

┌────────── Kunstig snavs på kalket modelflise ─────────┐

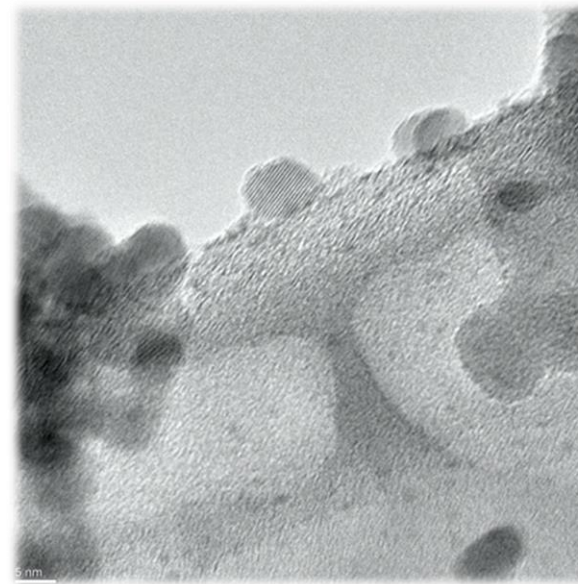
┌ Skamstrup Kirke snavs ┐



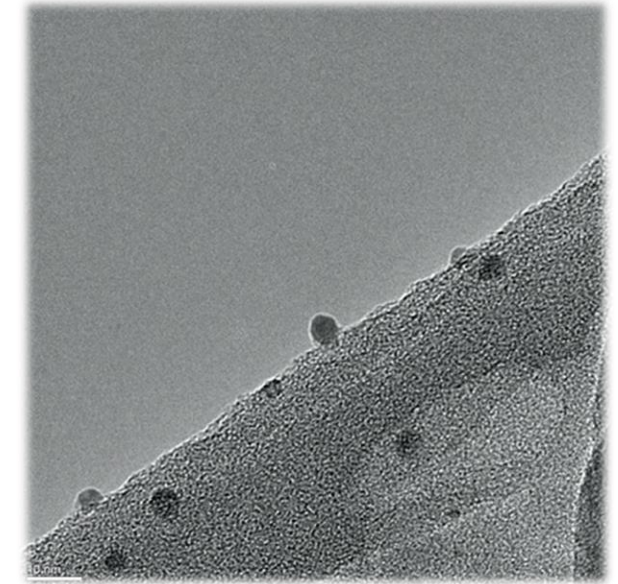
Rent carbon filter
19.500 x



Carbon filter med sod
19.500 x

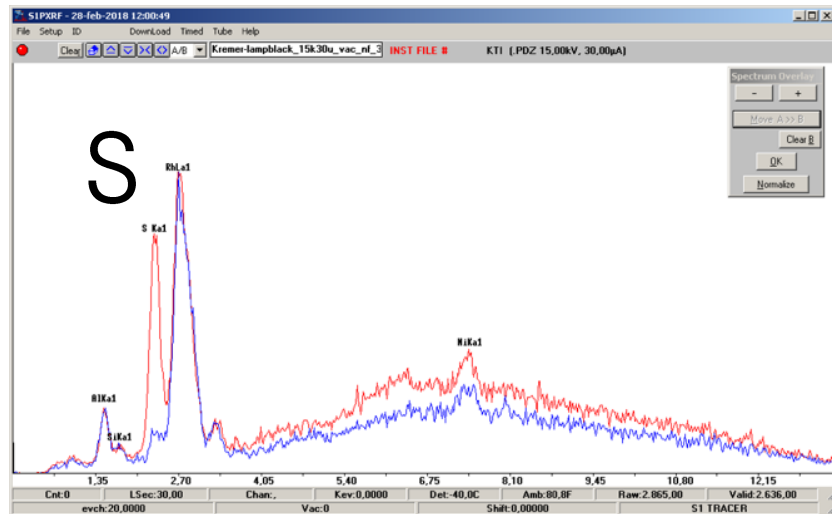
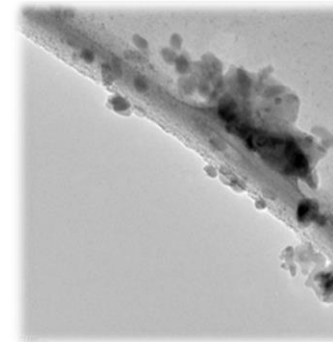
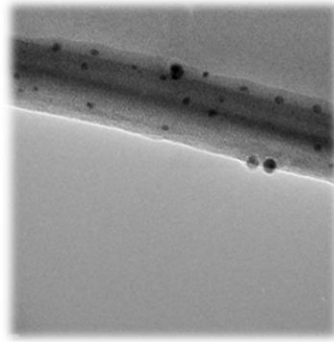
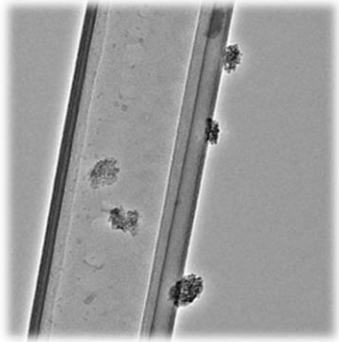


Carbon filter med sod
285.000 x

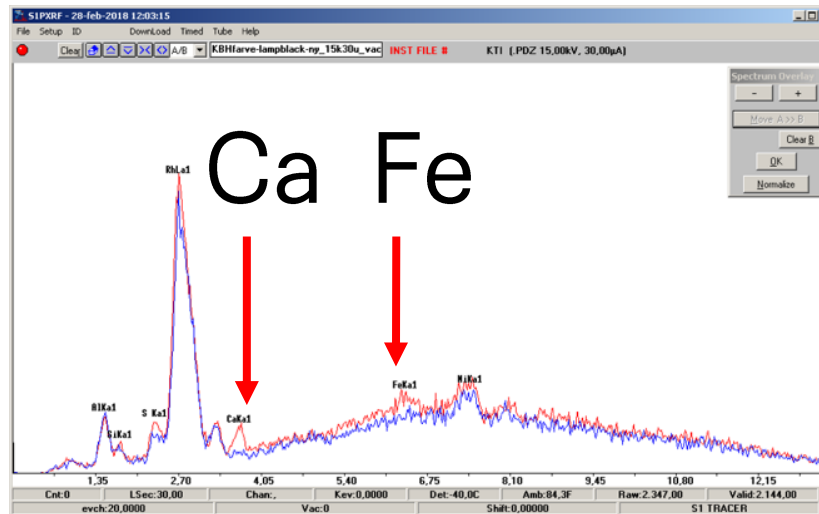


Carbon filter med sod
195.000 x

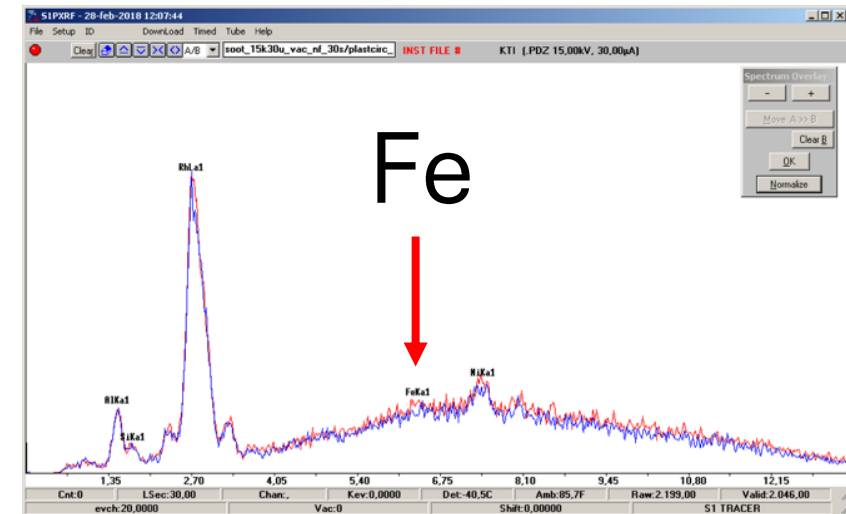
TEM og XRF af kunstigt snavs



Kremer
Lampesort pigment

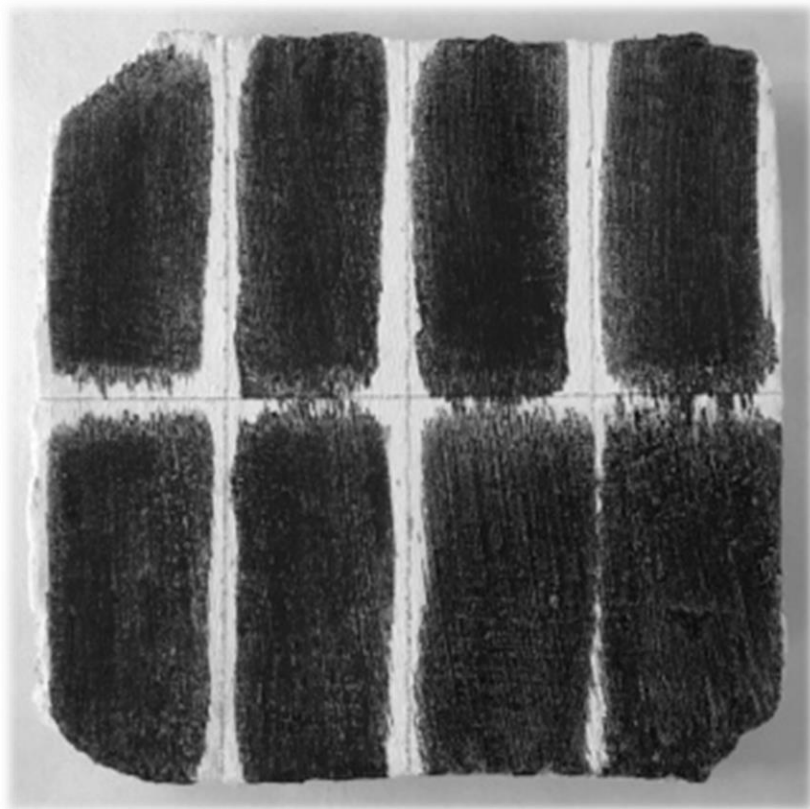


Kbh. Farvehandel
Lampesort pigment

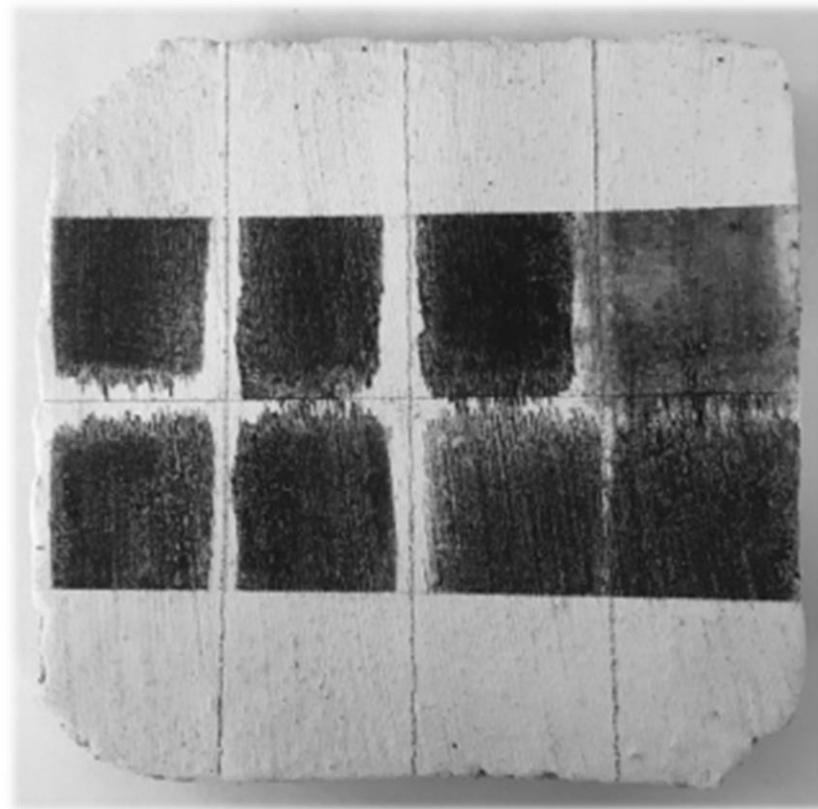


Sod fra stearinlys

Kunstigt tilsnavset model flise



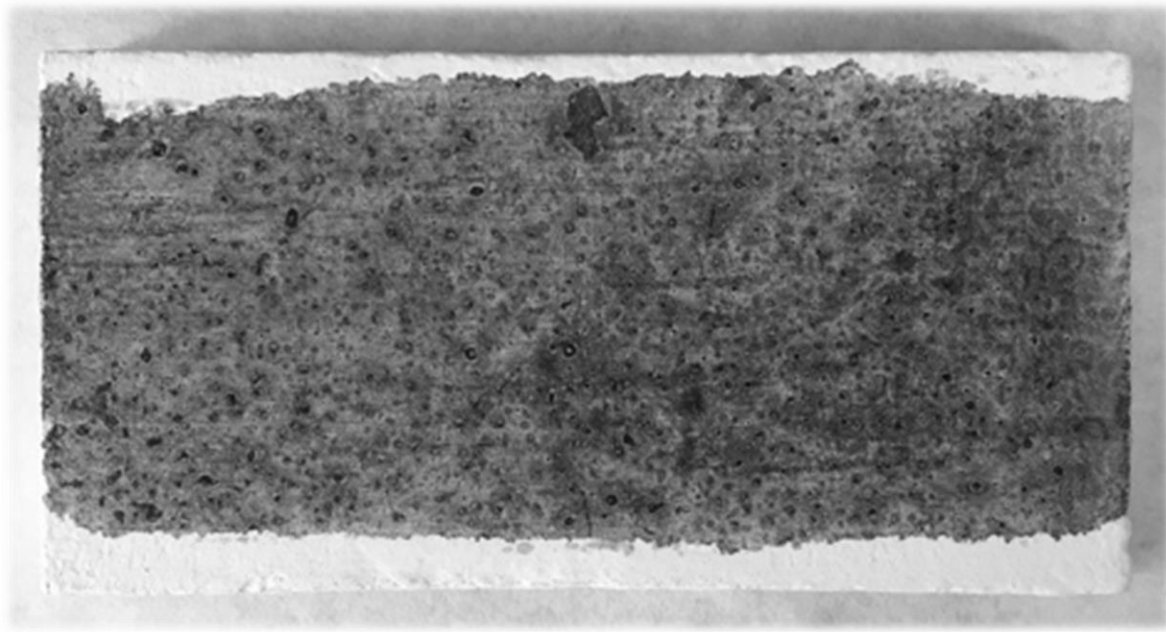
Model flise før rensning



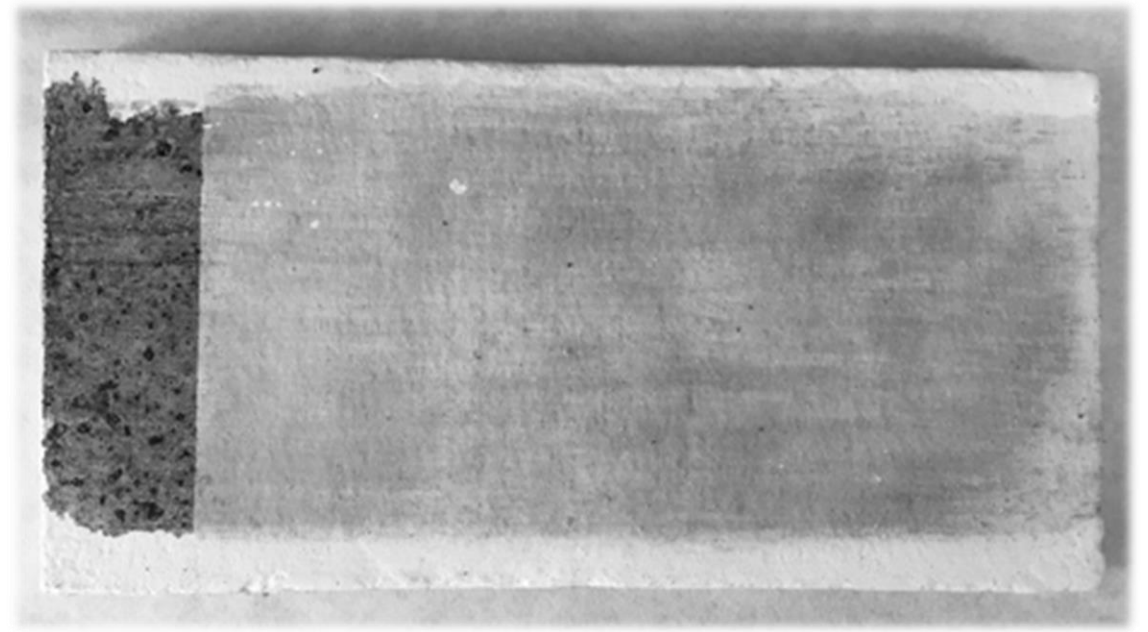
Model flise efter rensning



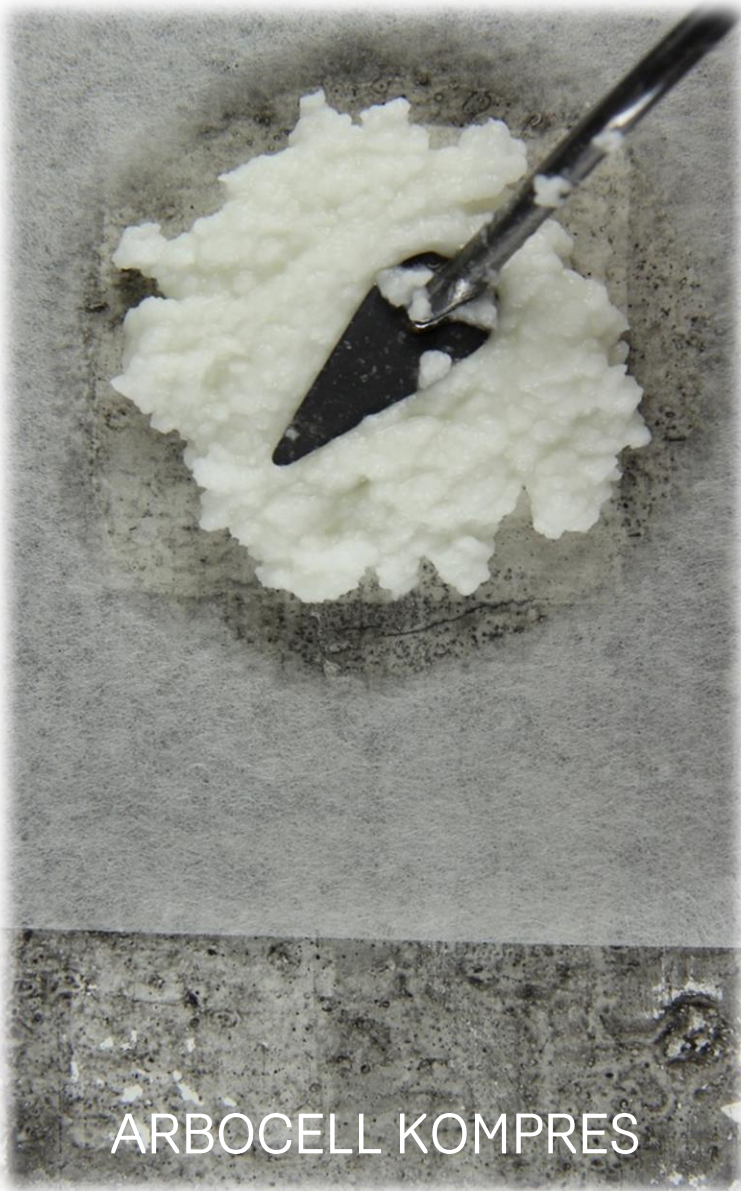
Kunstigt tilsnavset model flise



Model flise før rensning



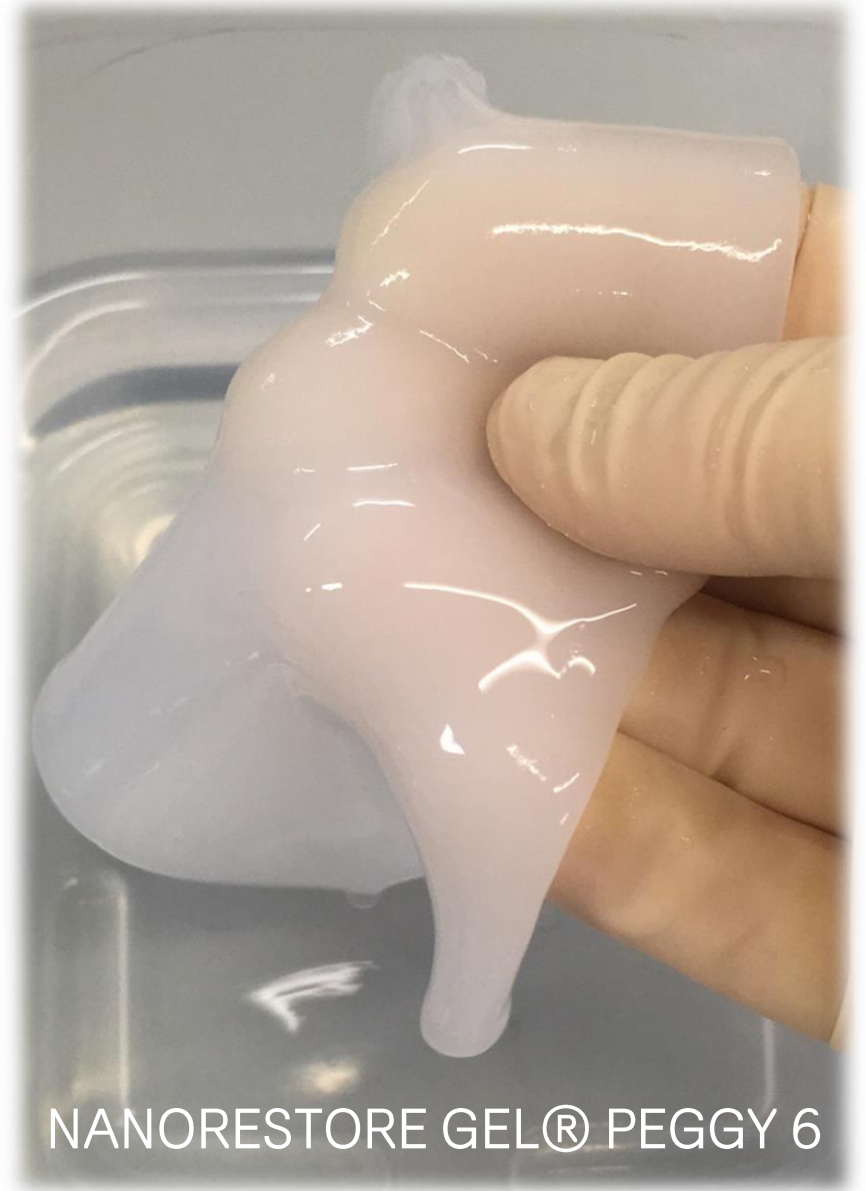
Model flise efter rensning



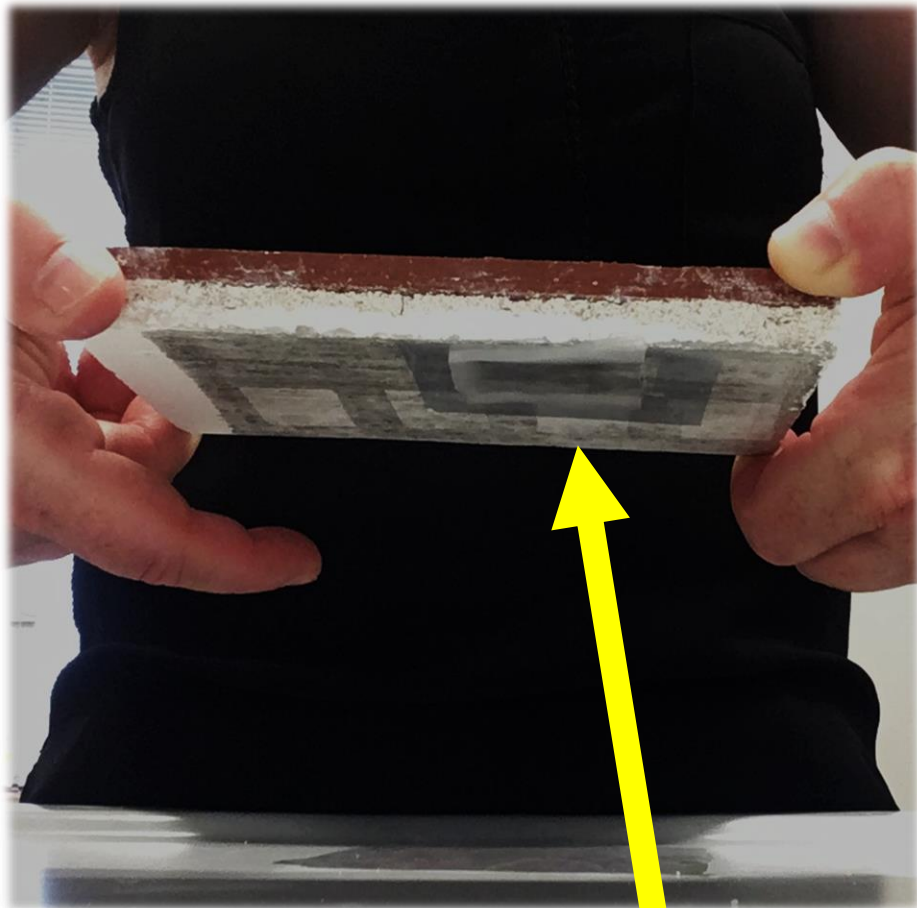
ARBOCELL KOMPRES



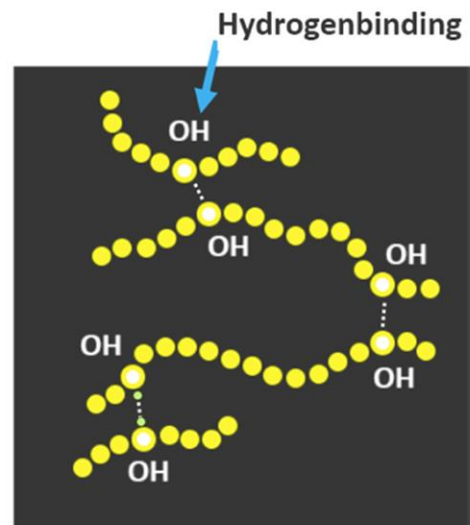
TØRSVAMP



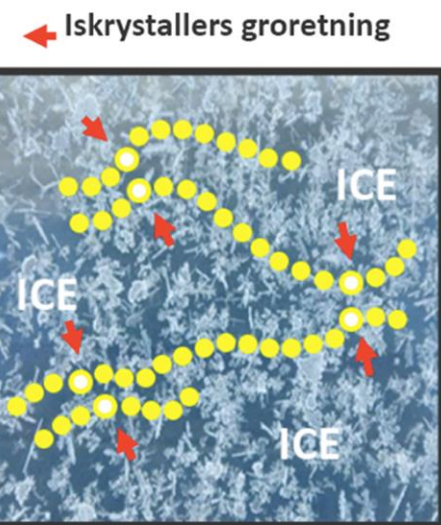
NANORESTORE GEL® PEGGY 6



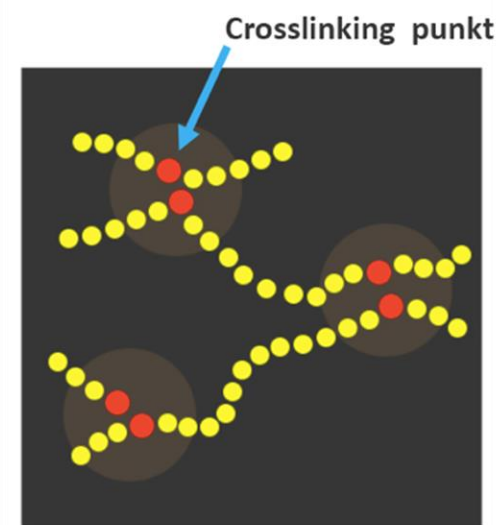
Nanorestore Gel® Peggy 6



PVA



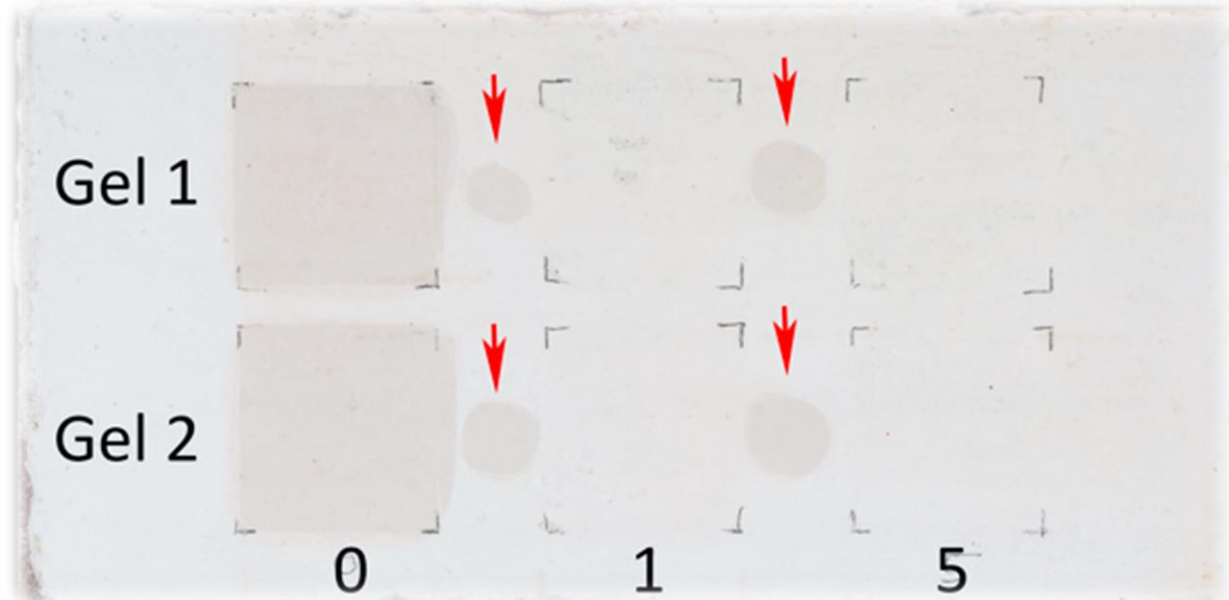
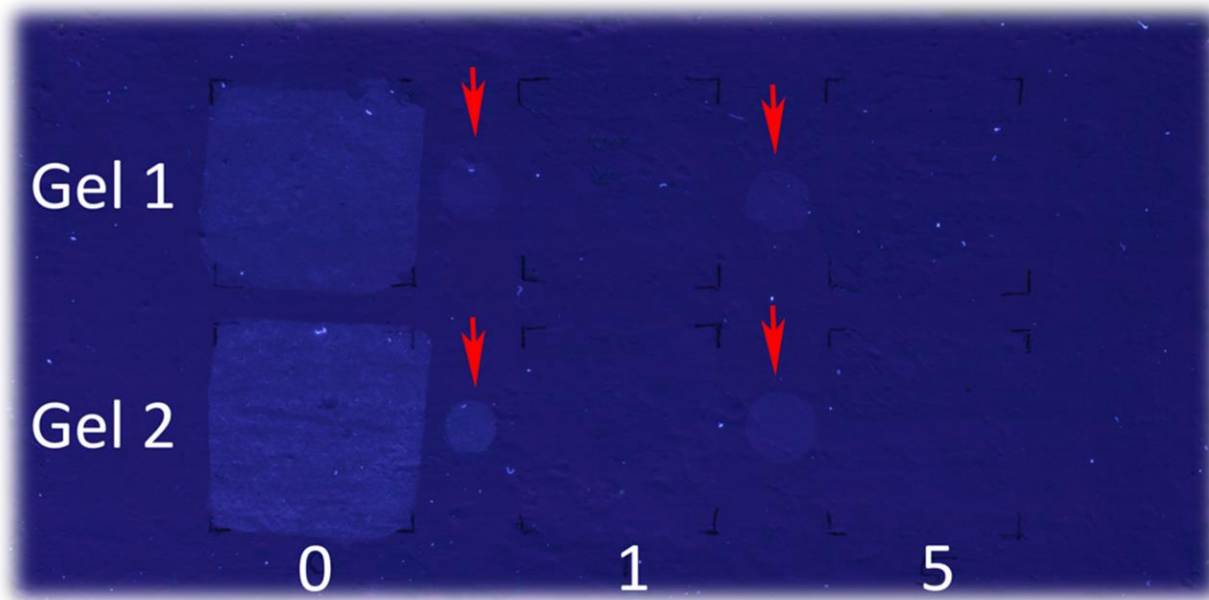
Nedfrysning



Optøning

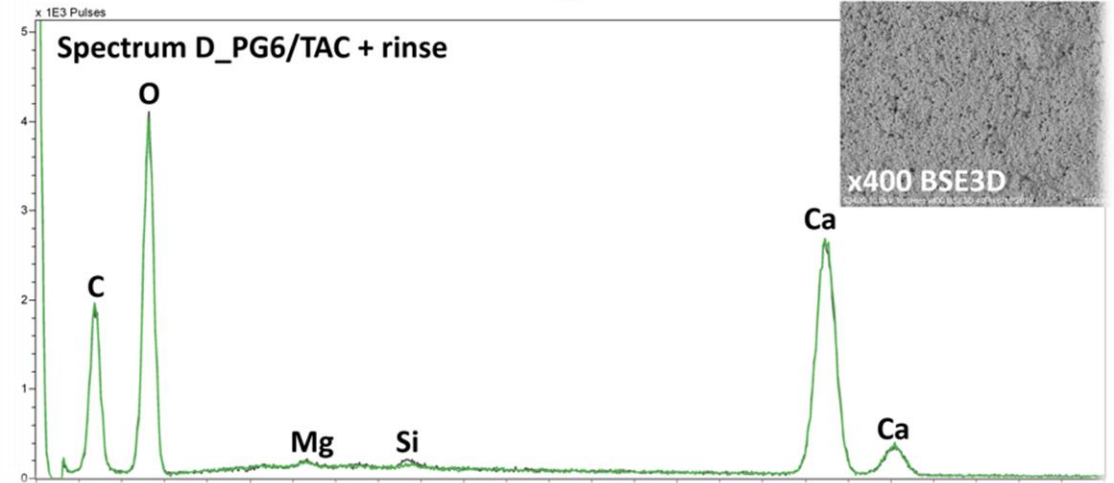
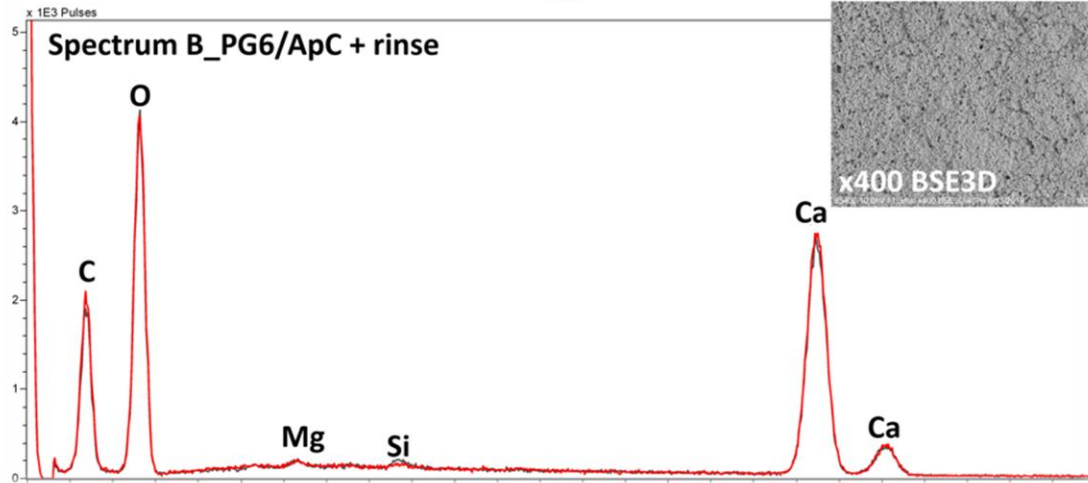
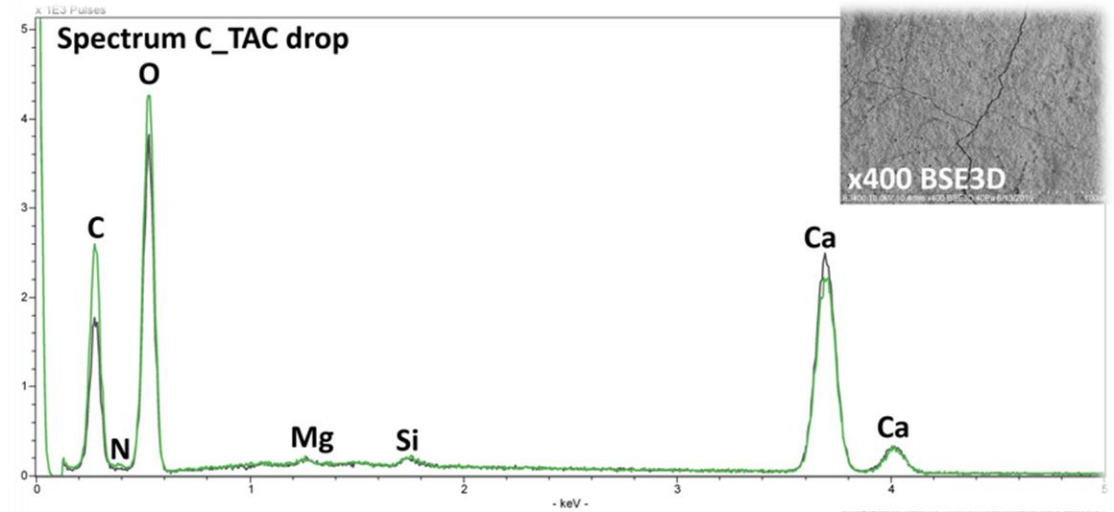
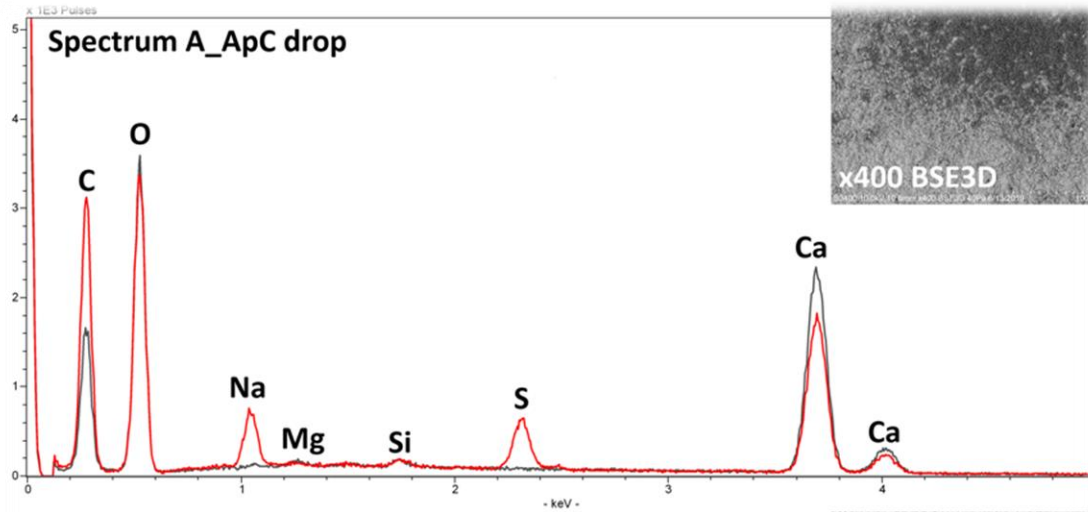
Restaflejringer fra Nanorestore Gel® Peggy 6

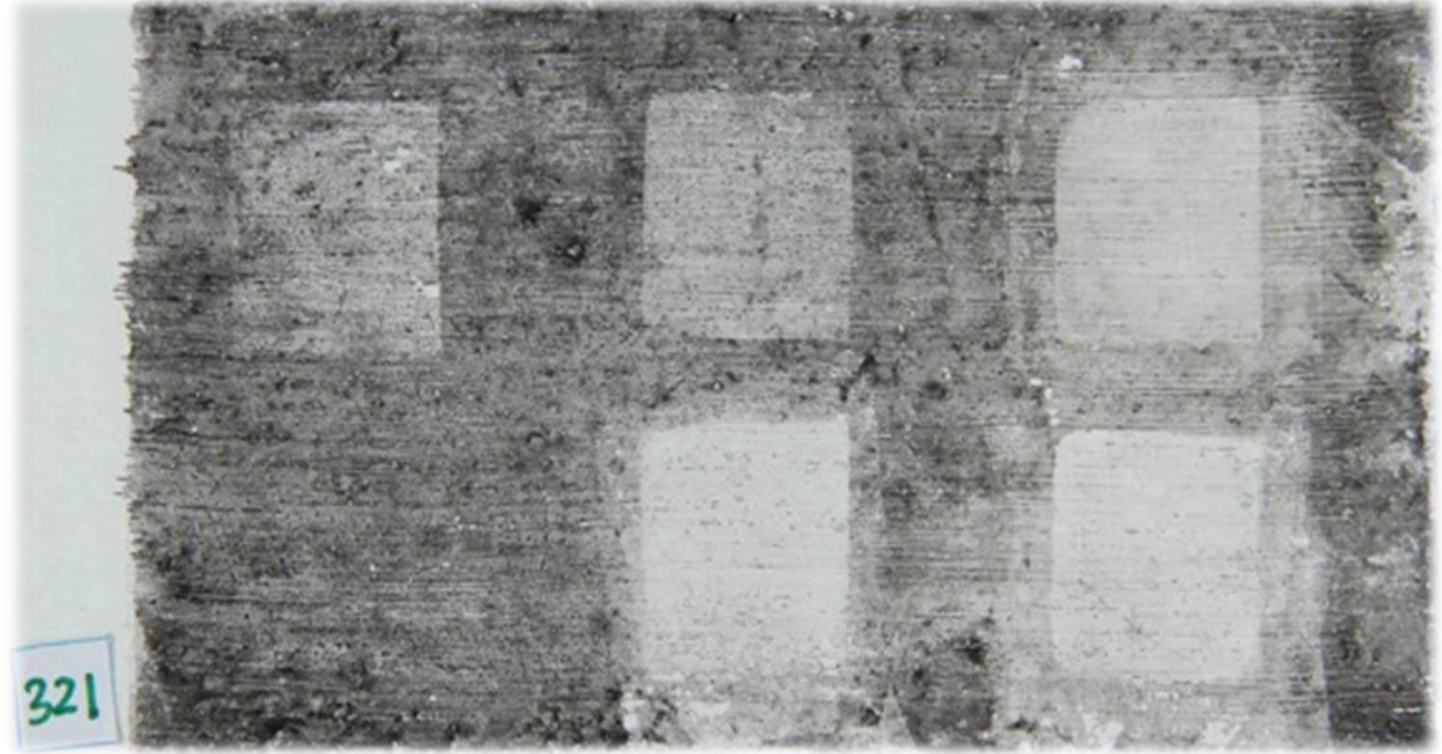
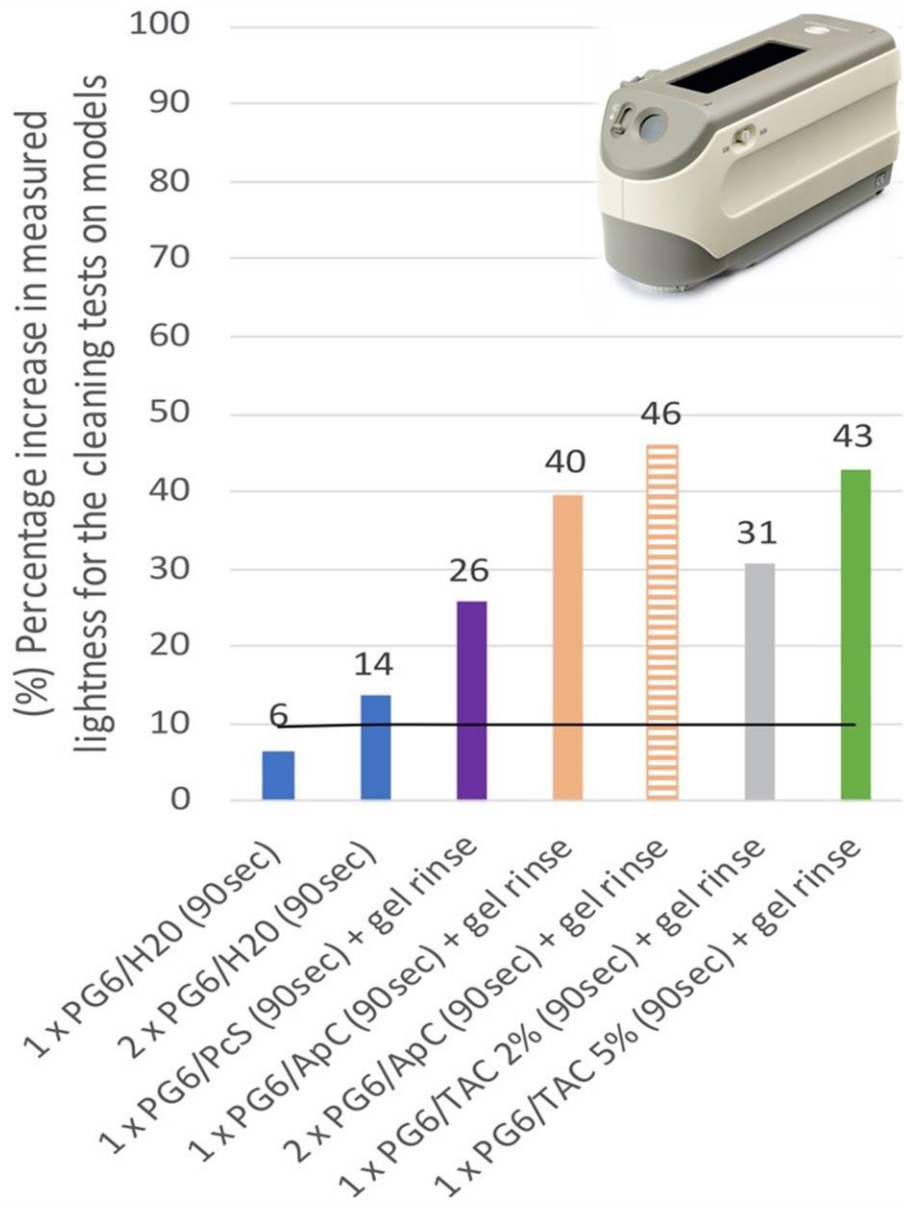
UV undersøgelse og ioddamp test



Restaflejringer af vandige rensningsprodukter

SEM-EDX

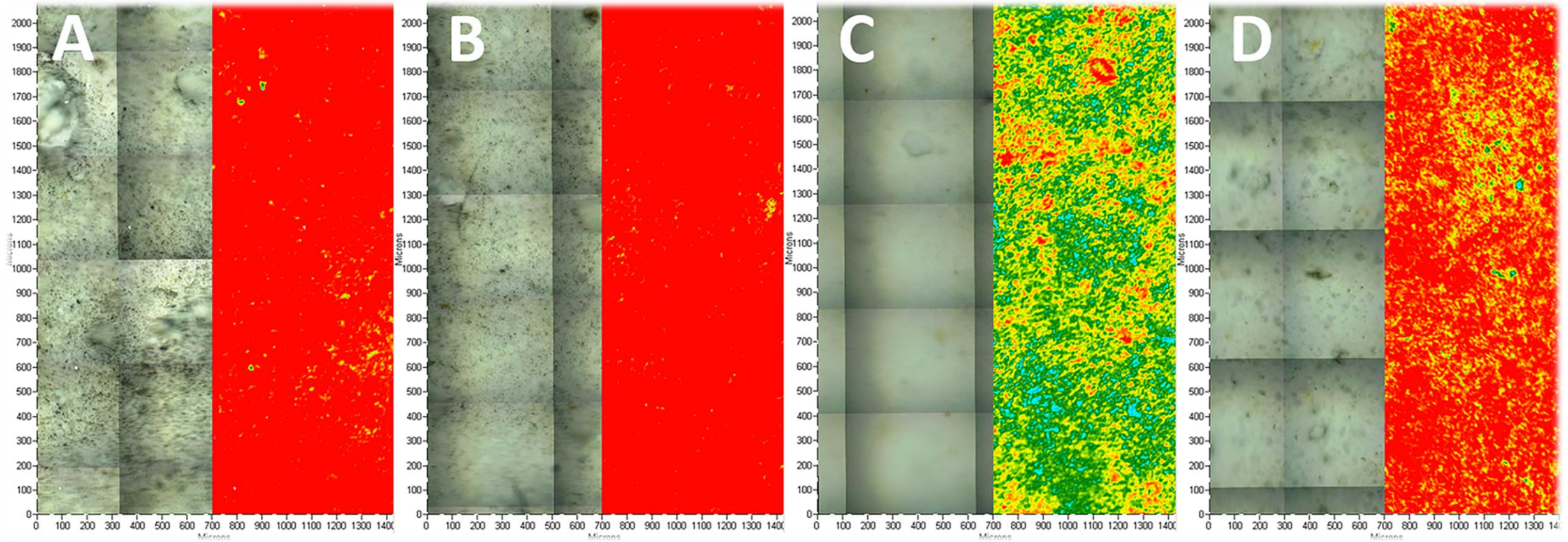




SCI Farvemålinger på modelfliser

Rester af den organiske dele af snavsblandingen

2D FTIR analyse



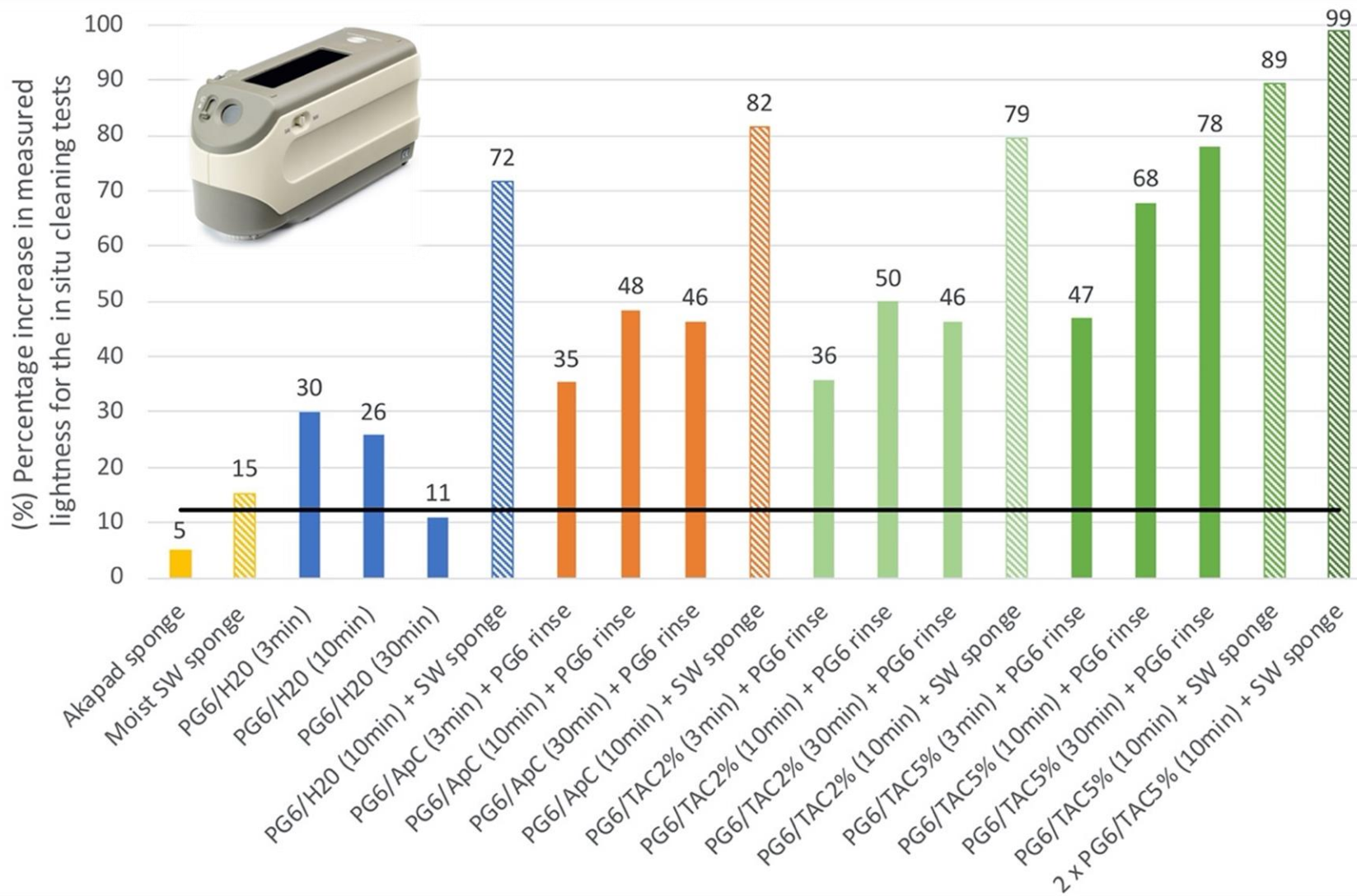
Akapad svamp

PG6 med H₂O

PG6 med ApC

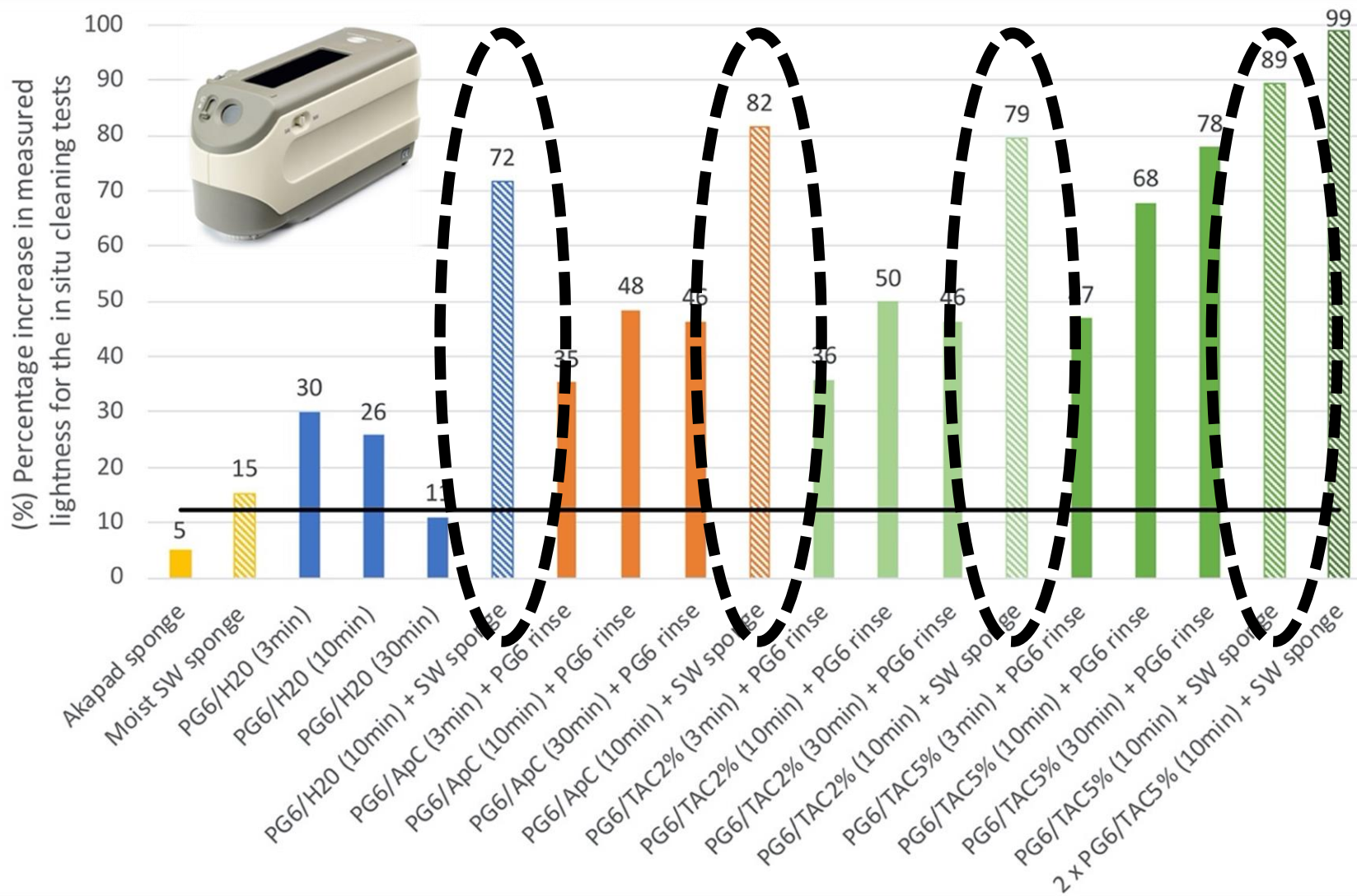
PG6 med TAC 5%





SCI Farvemålinger i Skamstrup Kirke



- Traditionel rensning
- H₂O
- ApC mikroemulsion
- TAC

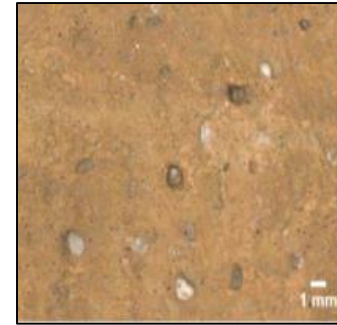
SCI Farvemålinger i Skamstrup Kirke



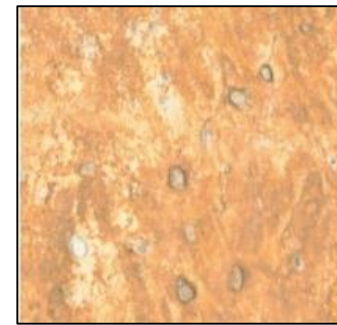
-  Traditional rensning
-  H₂O
-  ApC mikroemulsion
-  TAC



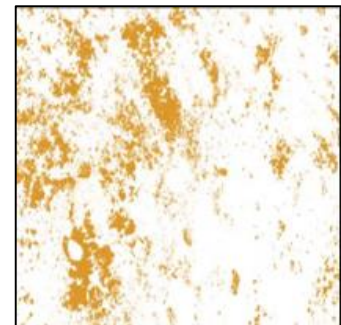
Cultural Heritage Image-J analysis Akapad tørsvamp



Før

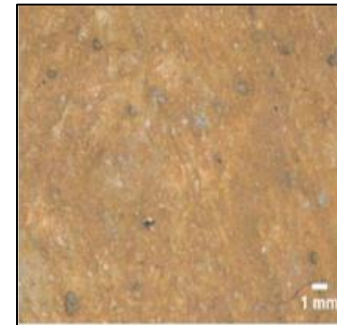


Efter

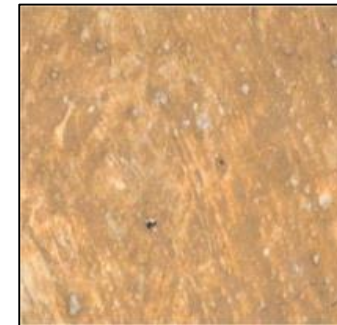


CH-ImageJ af
pigmenttab

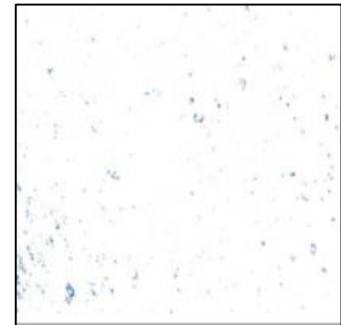
Nanorestore Gel® Peggy 6



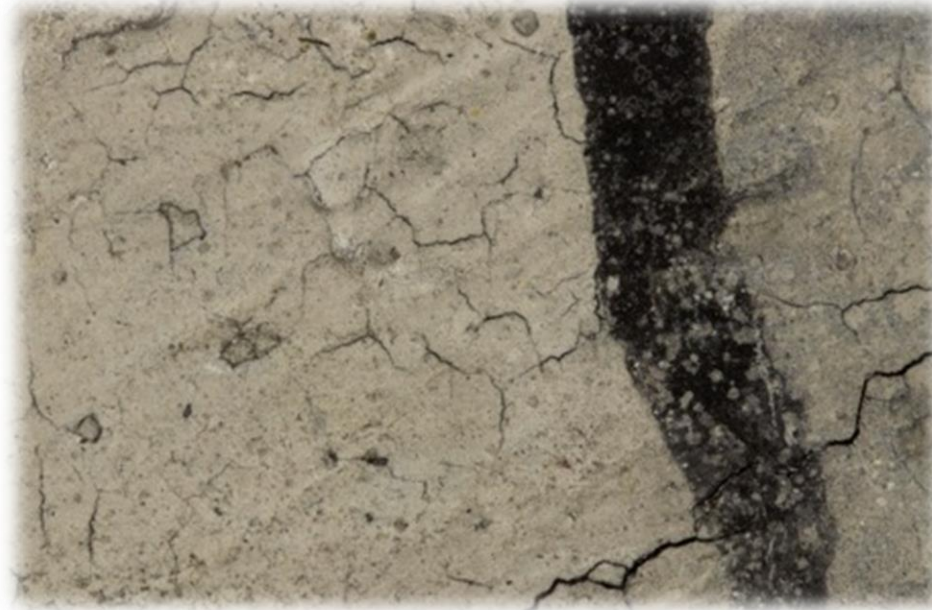
Før



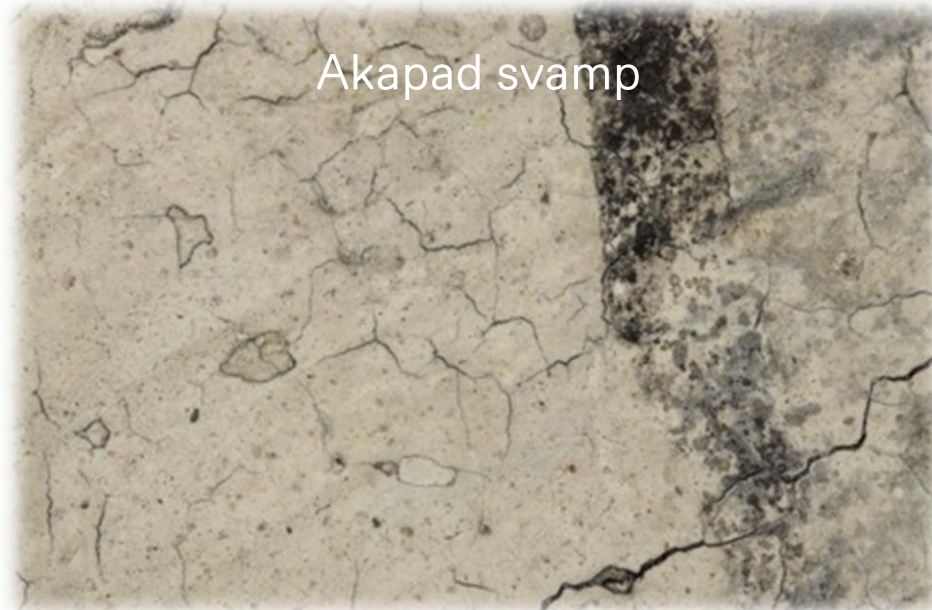
Efter



CH-ImageJ af
pigmenttab



Nanorestore Gel® Peggy 6



Akapad svamp





Tak for jeres
opmærksomhed!

Og tak for støtte:



AUGUSTINUS FONDEN

STIFTET 25. MARTS 1942

