

3-APTES on Dendritic Fibrous Mesoporous Silica Nanoparticles for the pH Controlled Release of Corrosion Inhibitors

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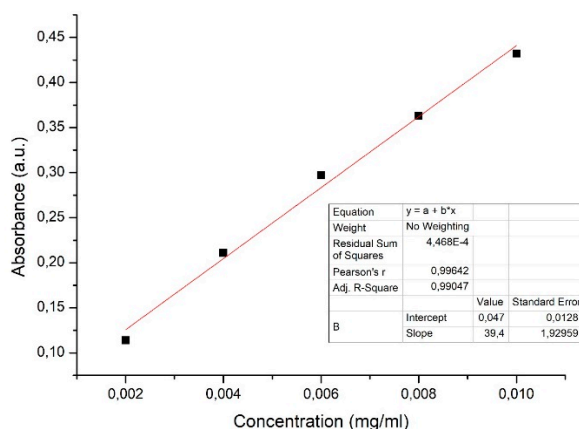
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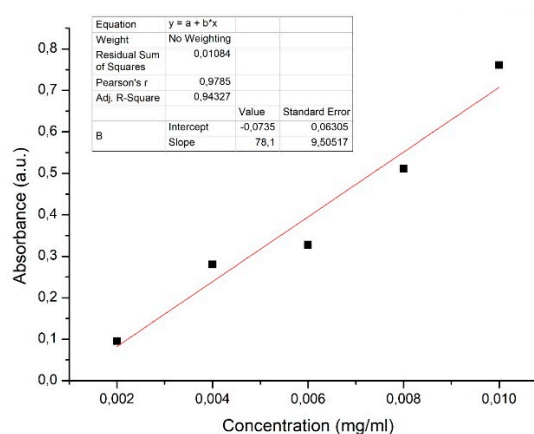
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Table S 1: Table with the release time before the drawing of the supernatant for the MSNP-based samples.

SAMPLES: BTA-MSNP, BTA-fMSNP, MBT-MSNP, MBT-fMSNP								
RELEASE TIME	T ₀	T ₀ +5min	T ₀ +30min	T ₀ +60min	T ₀ +120min	T ₀ +180min	T ₀ +240min	T ₀ +24h



a)



b)

Figure S1: UV-Vis calibration curve of BTA a) and MBT b).

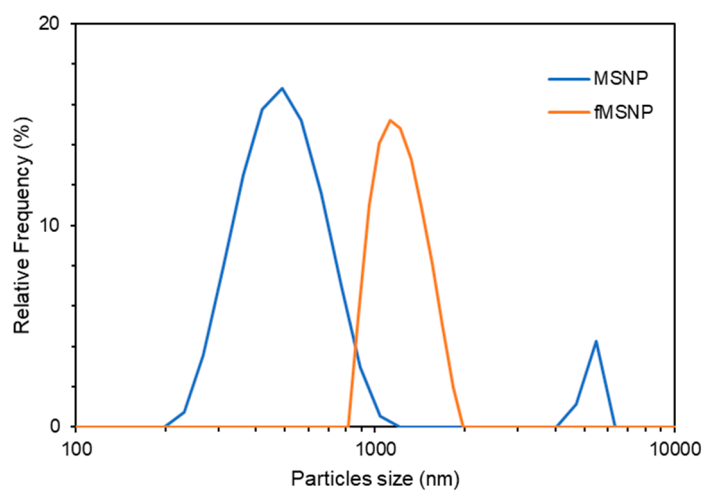
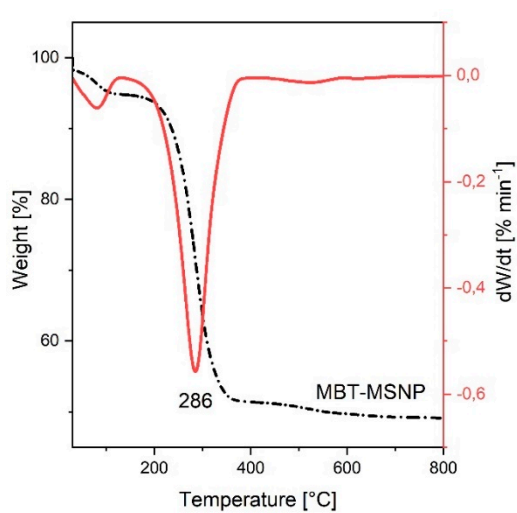
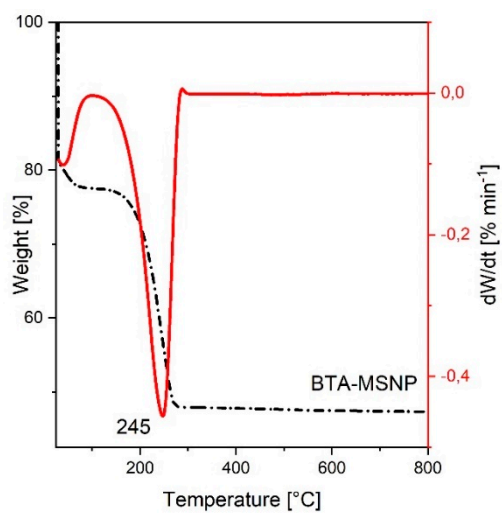


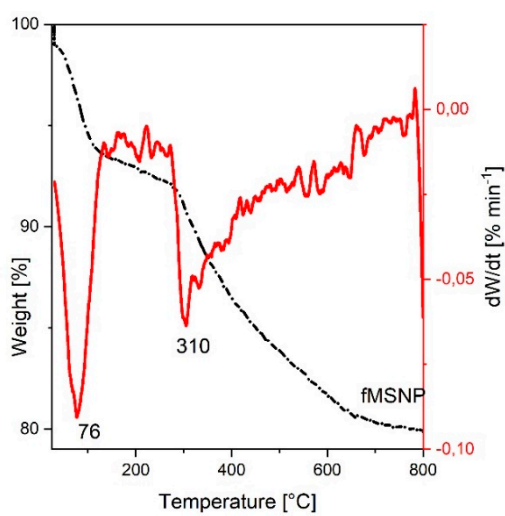
Figure S2: DLS measurement of MSNP and fMSNP.



a)



b)



c)

Figure S3: TGA (dash line) and DTG (solid line) of a) MBT-MSNP b) BTA-MSNP, and c) fMSNP.

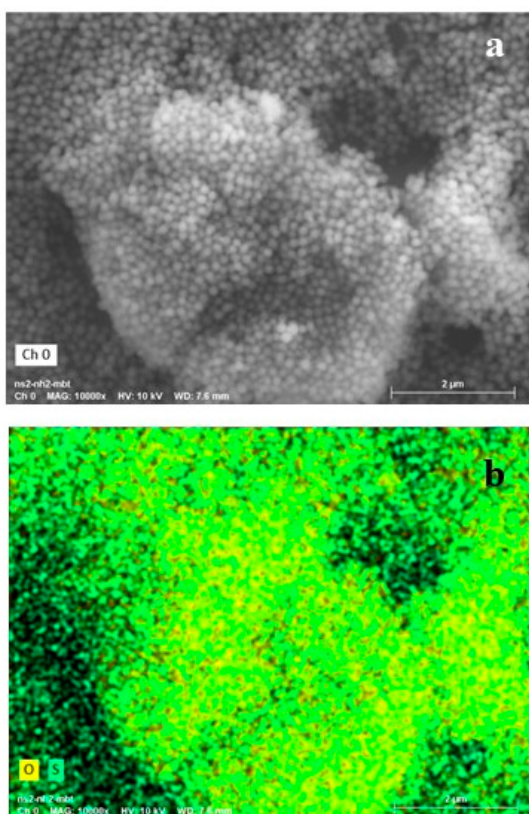


Figure S4: SEM-EDS analysis of MBT-fMSNPs: a) SEM image b) EDS oxygen - sulphur overlapped maps.

Table S2: Functional groups and mode of vibration from ATR-FTIR spectra of all samples

Sample	Wave number (cm ⁻¹)	Vibration type	Assignment
MSNP	1100-1049	Stretching	n _s Si-O-Si
	806	Stretching	n _{as} Si-O-Si
fMSNP	1479; 1566	Bending	dNH ₂
	2871	Stretching	n _s CH ₂
	2934	Stretching	n _{as} CH ₂
MBT	567; 600	Aromatic ring torsion	Aromatics
	665	Stretching	nC-S
	750	Wagging	wCH and wNH
	1010 - 1075	Stretching	nC-S in the S-C-S
	1281; 1319; 1238	Stretching	nC-N
	1423	Stretching	nC-C
	1597	Bending	dNH
	3111 – 2835	Stretching	nN-H
MBT- MSNP	567; 600	Aromatic ring torsion	Aromatics
	665	Stretching	nC-S
	750	Wagging	wC-H
	1319 - 1238	Stretching	nC-N
	1423	Stretching	nC-C
	1597	Bending	dN-H
MBT- fMSNP	3100-2800	Stretching	nN-H
	750; 725	Stretching	nC-S
	1479; 1566	Bending	dNH ₂
BTA	778	In plane bending	d N-H
	1006; 740	out-of-plane bending	g C-H
	1206	triazole ring vibration	aromatics
	1264	Stretching	nC-N
	1382; 1420	triazole ring deformation	aromatics
	1457; 1511	benzene ring deformation	aromatics
	1623; 1077	Bending	dNH
	3078-3032	Stretching	nCH
BTA- MSNP	3400-3200	Stretching	nNH
	778-740	out-of-plane bending	g C-H
	1206	triazole ring vibration	aromatics
BTA- fMSNP	1382	triazole ring deformation	aromatics
	778	In plane bending	d N-H
	740	out-of-plane bending	g C-H
	1206	triazole ring vibration	aromatics
	1382-1457	Bending	dNH ₂
	1479; 1566	Bending	dNH ₂