Supplementary Information (SI) for RSC Advances.
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SUPPLEMENTARY DATA

SUPPLEMENTARY FIGURES

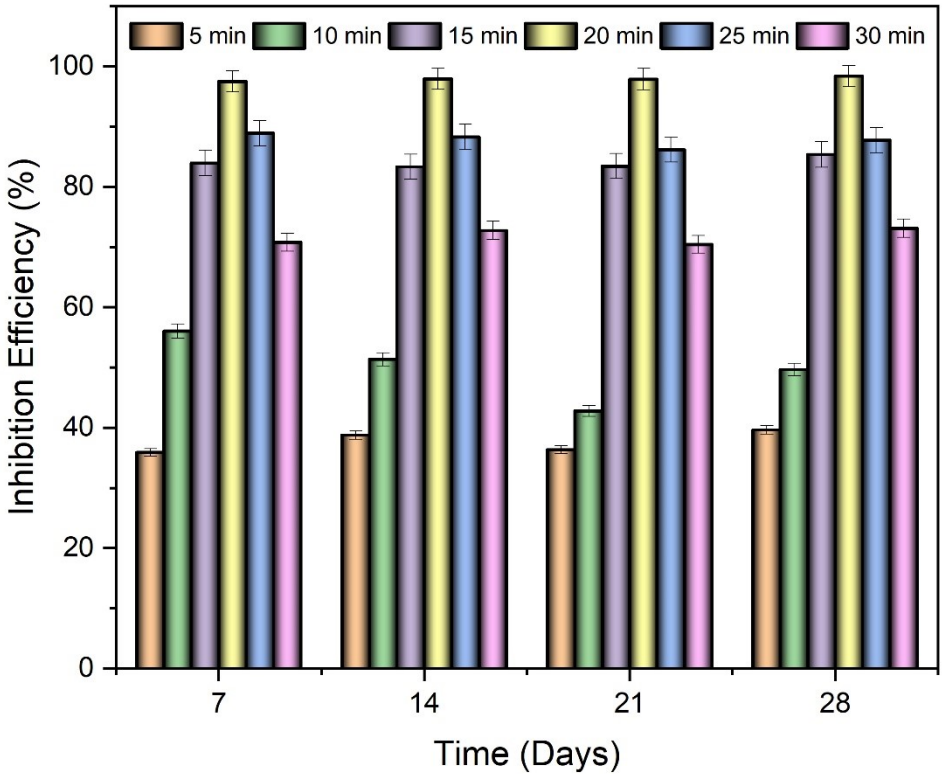

Fig. S1. Inhibition efficiency from weight loss studies

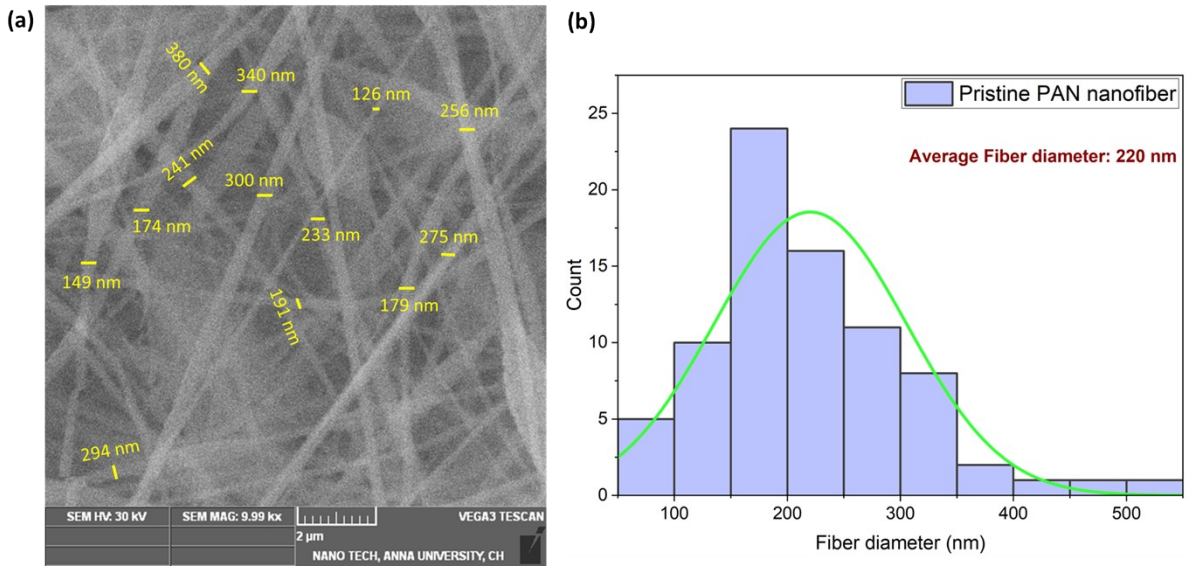

Fig. S2. Fiber diameter of pristine PAN nanofiber coated 316 L SS and its corresponding histogram

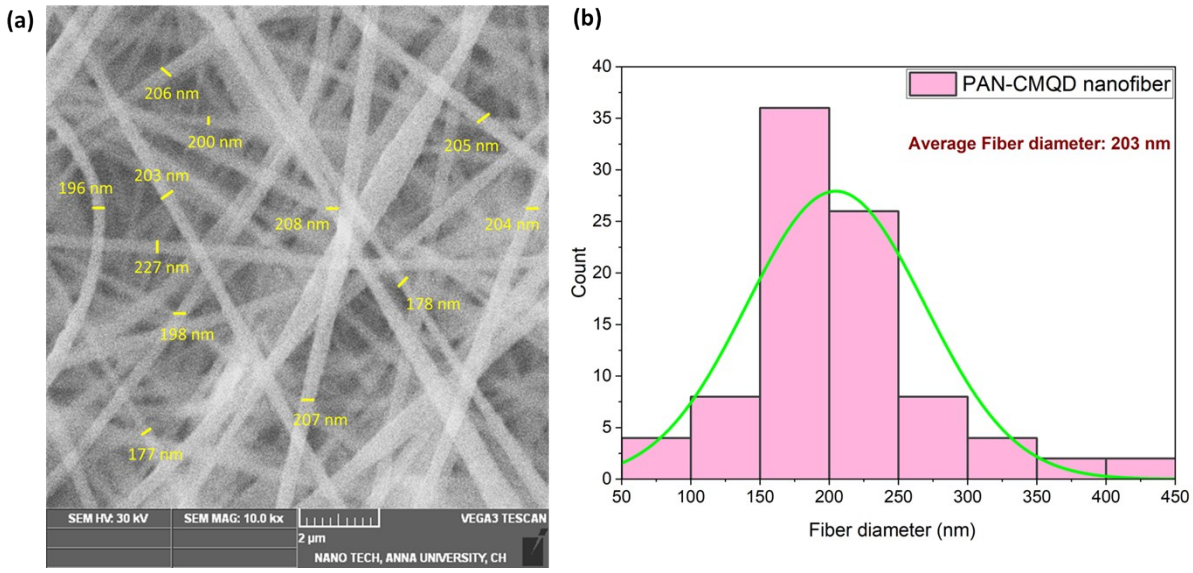

Fig. S3. Fiber diameter of PAN-CMQD nanofiber coated 316 L SS and its corresponding histogram

SUPPLEMENTARY TABLES

Table S1. Experimental data of weight loss study

316 L SS	Time (Days)	CR (mm/year)	IE (%)
Uncoated			
	7	0.024333±0.0012	-
	14	0.02221±0.0013	-
	21	0.02027±0.0011	-
	28	0.02205±0.0014	-
5 min			
	7	0.0156±0.00081	35.88
	14	0.0136±0.00044	38.76
	21	0.0129±0.00095	36.35
	28	0.0133±0.00052	39.64
10 min			
	7	0.0107±0.0012	56.03

	14	0.0108±0.0009	51.35
	21	0.0116±0.0010	42.77
	28	0.0111±0.0007	49.65
15 min			
	7	0.0039±0.00054	83.97
	14	0.00372±0.00029	83.34
	21	0.003358±0.00035	83.43
	28	0.00322±0.00056	85.39
20 min			
	7	0.00061±0.000012	97.50
	14	0.00047±0.000025	97.92
	21	0.00043±0.000031	97.87
	28	0.00035±0.000033	98.41
25 min			
	7	0.0027±0.00030	88.90
	14	0.0026±0.00022	88.29
	21	0.0028±0.00017	86.18
	28	0.0027±0.00012	87.75
30 min			
	7	0.0071±0.00042	70.81
	14	0.00602±0.00019	72.76
	21	0.00599±0.00036	70.44
	28	0.00593±0.00012	73.11

Table S2. The electrochemical parameters obtained from PD plot

Sample	**E_{corr} (V)**	**I_{corr} (A/cm^2)**	**βa (V/dec)**	**βc (V/dec)**	**IE (%)**
Uncoated 316 L SS	-0.432795699	$-4.9133*10^{-6}$	0.38751 ± 0.00164	-0.05578 ± 0.0017	-
Etched 316 L SS	-0.33172	$-2.22473*10^{-6}$	0.18785 ± 0.00373	-0.15494 ± 0.00196	54.72
PAN/316 L SS	-0.251612903	$-1.904296875*10^{-6}$	0.28878 ± 0.00172	-0.21711 ± 8.53888E-4	61.24
PAN-CMQD/316 L SS	-0.0940860215	$-4.0588*10^{-8}$	0.52141 ± 0.00567	-0.37696 ± 0.00251	99.18

Table S3 EIS parameters obtained from ZSmipwin software for uncoated 316 L SS, etched 316 L SS, PAN coated 316 L SS and PAN-CMQD coated 316 L SS.

Parameters	Uncoated 316 L SS	Etched 316 L SS	PAN/ 316 L SS	PAN-CMQD/ 316 L SS
R_s (Ohm cm^2)	24.63	26.89	29.12	0.02419
Q_{di} (S sn cm^{-2})	$6.353*10^{-5}$	$1.793*10^{-4}$	$3.467*10^{-4}$	7.69E-8
n_{di}	0.8	0.8	0.8	0.8288
R_{ct} (Ohm cm^2)	795	1989	$2.395*10^{15}$	$5.851*10^{4}$
Q_{coat} (S sn cm^{-2})	-	-	$2.322*10^{-8}$	4.874E-5
n_{coat}	-	-	0.8	1
R_{coat} (Ohm cm^2)	-	-	1029	29.54
χ^2	$6.576*10^{-3}$	$2.90*10^{-2}$	$1.261*10^{-2}$	$9.01*10^{-4}$

Table S4 Phase angle value of HFR and LFR for the uncoated and coated 316 L SS for the 1st and 30th day of immersion in corrosive electrolyte.

-Phase angle (θ)	Days	Uncoated 316 L SS	PAN-CMQD/316 L SS
Low frequency Region (LFR)	1st	15 ± 0.405	72 ± 1.512
	30th	3 ± 0.081	70 ±1.47
Higher Frequency region (HER)	1st	25 ± 0.40	51 ± 0.867
	30th	16 ± 0.256	48 ± 0.816

Table S5 Comparison with the current state of art with respect to nanofiber based anticorrosive coatings.

S. No.	NANOFIBER COATED METALS	COATING METHOD	CORROSION MEDIUM	PERFORMANCE (IE %)	REFERENCES
1.	Polyaniline/cellulose nanofiber coated Q235 carbon steel	TEMPO oxidation method	3.5 wt.% NaCl	99.11	68
2.	ZnO-NiO-CuO/ polycaprolactone	Electrospinning	1 M HCl	94.8 %	69

	nanofiber coated mild steel				
3.	Carbon nanofiber coated AISI 1020 steel and AZ31 magnesium alloys	plasma sputter, accompanied by the chemical vapor deposition method	3.5 wt.% NaCl	Coated steel 97% and AZ31 magnesium alloy 98 %	70
4.	Polyvinyl chloride nanofiber coated Aluminum (Al) Steel (S) Brass (B)	Electrospinning	3.5 wt.% NaCl	99.75 for Al 78.33 for Steel and 89.10 for brass	71
5.	PAN-GO_{CM} and PAN-BDMCAQD coated 316 L Stainless Steel	Electrospinning	3.5 wt.% NaCl	99.63 % for PAN-GOCM/ 316 L SS and 99.86 % for PAN-BDMCAQD/316 L SS	48
6.	PVC-Ceria coated Aliminium	Electrospinning	0.1 M HCl	85.7	72
7.	PAN-CMQD coated 316 L SS	Electrospinning	3.5 wt.% NaCl	99.18%	This work