

섬유복합구조체 여과성능 소재 주사전자현미경 촬영 DB (87개)

○ 시험 개요

여과성능 소재의 주사전자현미경(Scanning Electron Microscope of non-woven)은 섬유복합구조체 여과성능 소재에 사용되는 재료 혹은 재료 어셈블리들의 표면 형태학(Surface morphology)을 측정하는 방법으로 사용됨.

○ 시험규격

시료를 백금 증착장비에 넣고 진공 상태를 가한 후 약 120~160초 동안 백금 혹은 금을 증착시키고 증착된 시료를 전자현미경에 장착시키고 고압을 가하여 측정함.

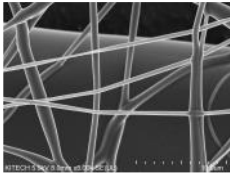
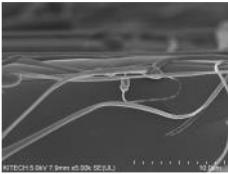
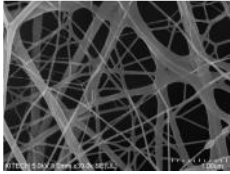
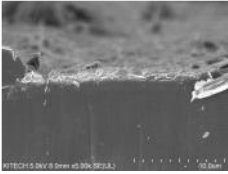
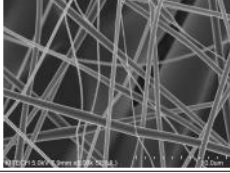
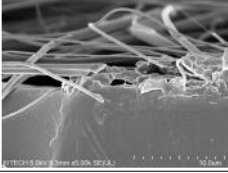
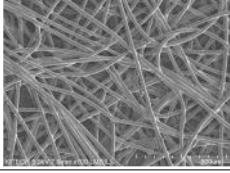
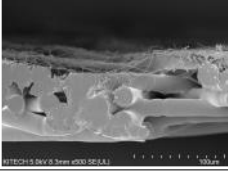
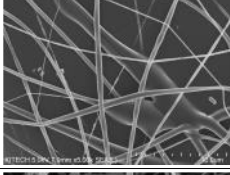
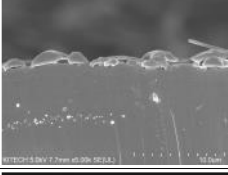
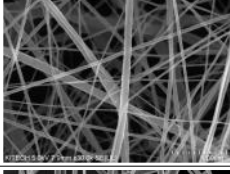
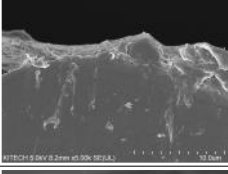
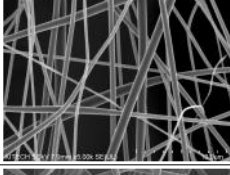
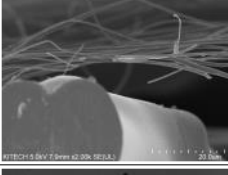
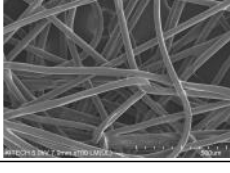
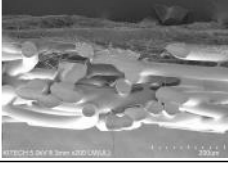
○ 시험환경 및 시험편

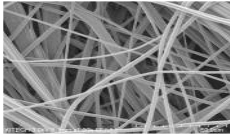
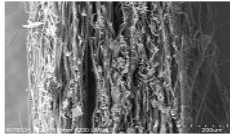
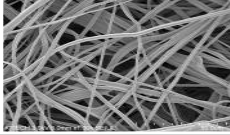
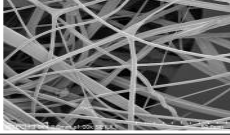
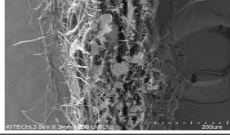
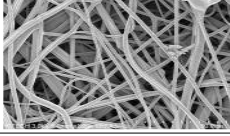
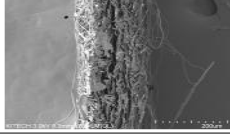
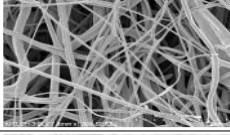
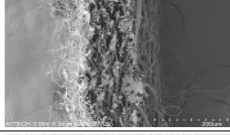
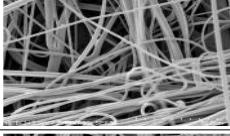
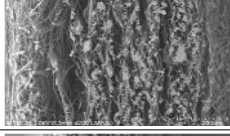
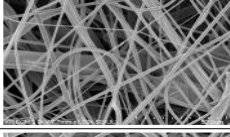
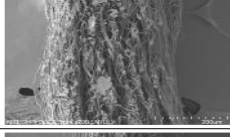
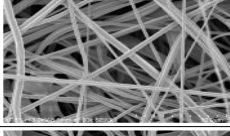
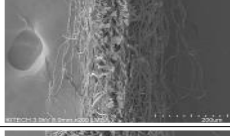
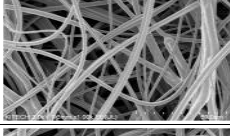
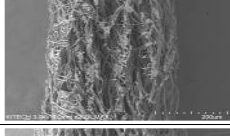
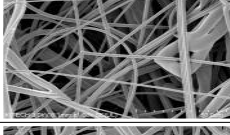
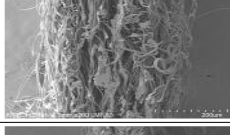
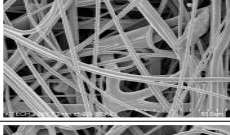
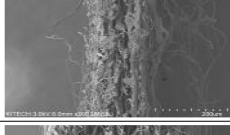
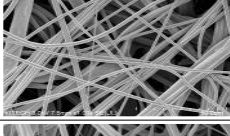
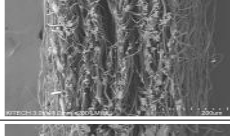
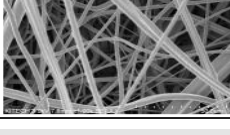
시험편 치수는 10mm×10mm, 시험환경은 대기온도 20℃, 습도 20% 에서 시험.

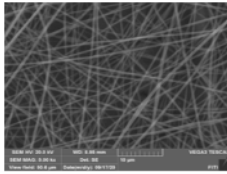
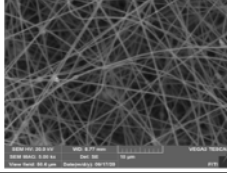
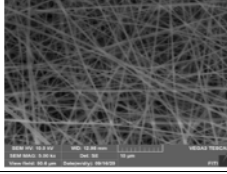
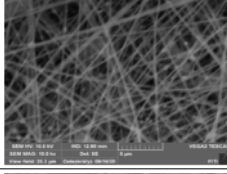
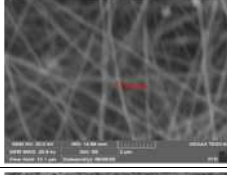
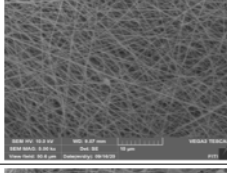
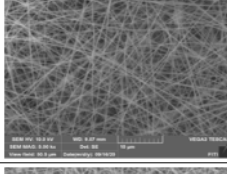
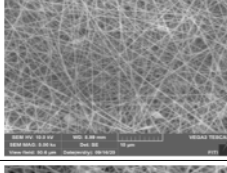
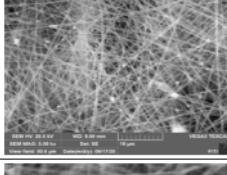
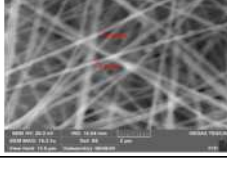
제 품 명	소 재	특 징
나노섬유필터 원단	Polyethersulphone(PES)	나노층 3Layer, 부직포층 1Layer로 구성
Meltblown 필터 원단	Polypropylene(PP)	다른 조건으로 제조된 13개의 필터 원단
나노섬유필터 원단	Polyacrylonitrile(PAN)	다른 원소재 함량으로 제조된 10개의 필터 원단
고강도 직물 8종	Polyethylene terephthalate(PET)	섬도/밀도를 달리 구성하여 8종 제작
고강도 원사 6종	Polyethylene terephthalate(PET)	섬도를 달리한 6종(1500, 3000, 6000, 7500, 9000, 12000 Denier)
삼성 공기청정기	-	가정용 공기청정기
위니아 공기청정기	-	가정용 공기청정기

○ 주사전자현미경 촬영장비

<SEM Image>

구분		SEM 이미지		평균 직경 (nm)	평균 두께 (μ m)
나노섬유 필터 원단 (PES)	나노 Base Layer - 30g부직포			547.22	1.21
	나노 Filtration Layer - 30g부직포			146.96	1.05
	나노 Protect Layer - 30g부직포			674.33	1.99
	30g 부직포			1915	75.6
	나노 Base Layer - 70g부직포			478.95	1.43
	나노 Filtration Layer - 70g부직포			116.46	0.635
	나노 Protect Layer - 70g부직포			582.61	2.61
	70g 부직포			3785	223

Melt blown 필터 원단	MB1			1.84	379
	MB2			1.56	101
	MB3			1.67	164
	MB4			1.62	129
	MB6			1.40	166
	MB7			1.58	534
	MB8			1.59	246
	MB9			1.73	90.3
	KITECH			1.85	285
	3M			1.82	228
	BEF99			2.15	125
	KF94			1.86	324
	CHL KOREA			2.02	234

나노섬유 필터 원단 (PAN)	CNT		591.0	—
	Graphene		436.2	—
	PAN-1		430.7	—
	PAN-2		325.9	—
	PAN-3		224.6	—
	PAN-4		257.1	—
	PAN-5		276.2	—
	PAN-6		253.0	—
	PAN-7		347.8	—
	PAN-8		334.7	—