

MWNT

- Consist of 2 or more layers of carbon
- Tend to form unordered clumps

SWNT

- Consist of just one layer of carbon
- Greater tendency to align into ordered bundles
- Used to test theory of nanotube properties

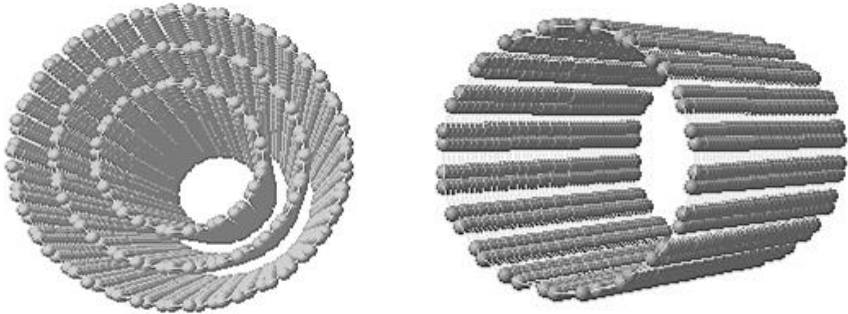


Fig. 3. Carbon Nanotubes Classification



Fig. 4. 1kg/hour CNT production facility

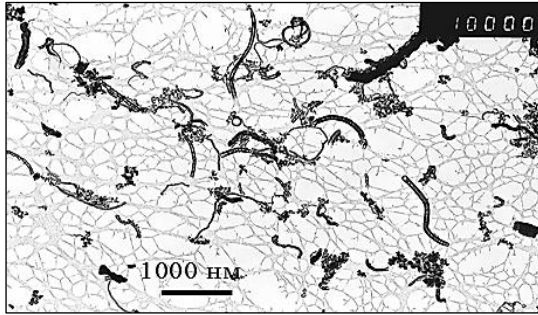


Fig. 5. Nanostructured carbon dispersion

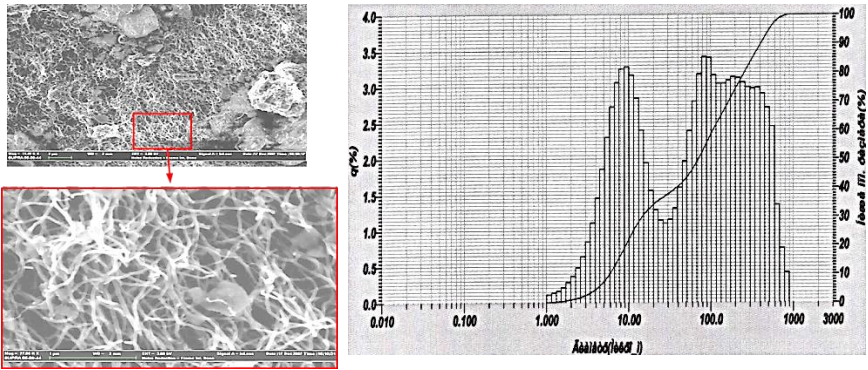


Fig. 6. Measurement of dispersed composition of the carbon nanomaterial as produced (Horiba particle Size distribution analyzer LA-950)

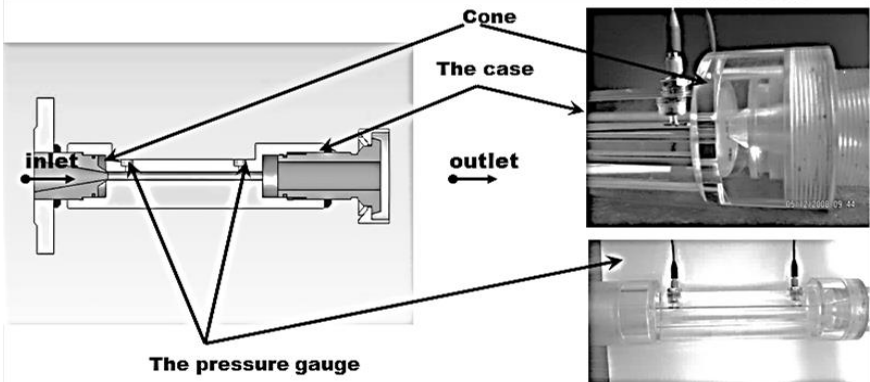


Fig. 7. Cavitation based art nano carbon dispersion unit

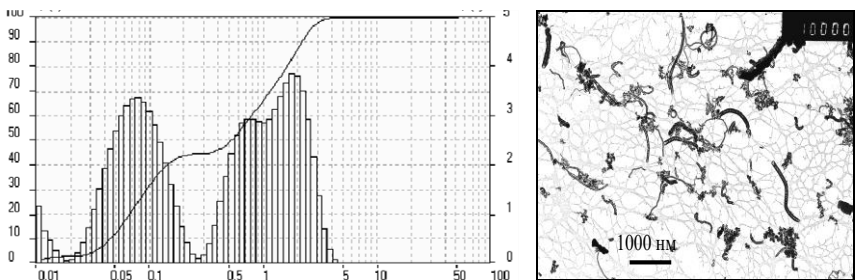


Fig. 8. SEM Picture of suspension



Fig. 9. Carbon dispersion facility

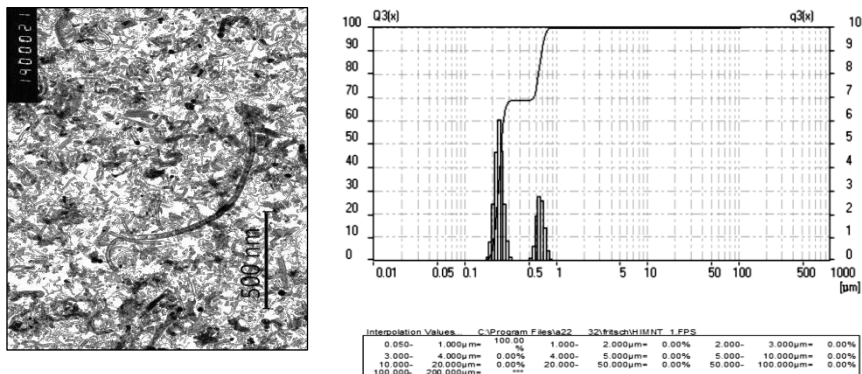


Fig. 10. Particles Size Distribution of ART NANO CARBON After Dispersion in Hydrodynamic Cavitation Facility

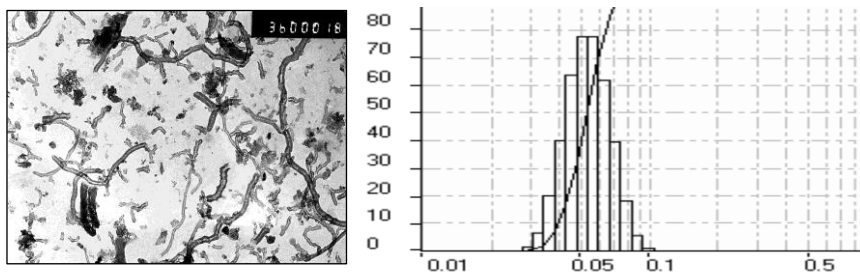


Fig. 11. Particles Size Distribution of ART NANO CARBON After Dispersion and Refining

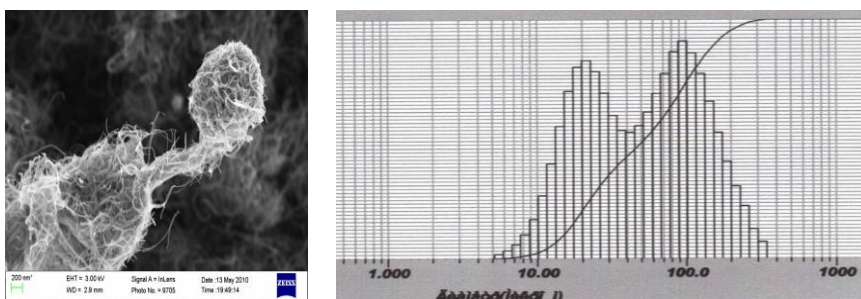


Fig. 12. Particles Size Distribution of C150P “BAYER” Carbon Nanotubes After Dispersion in Hydrodynamic Cavitation Facility

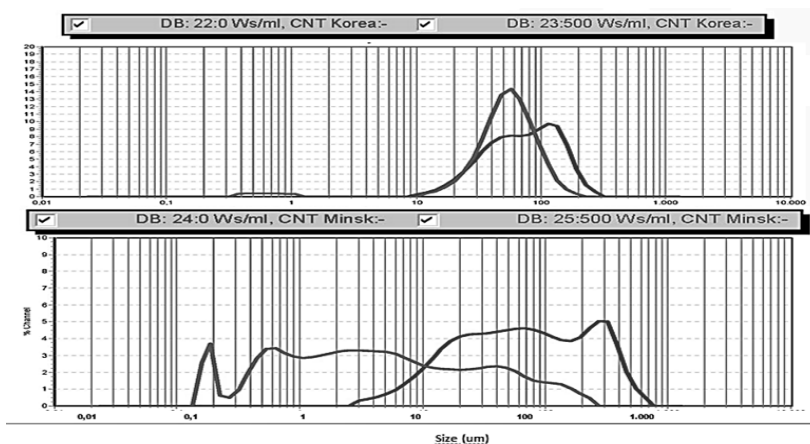


Fig. 13. Comparison of “ART Nano” Carbon Nanotubes and Korean(«Nano-Vision Tech») Carbon Nanotubes

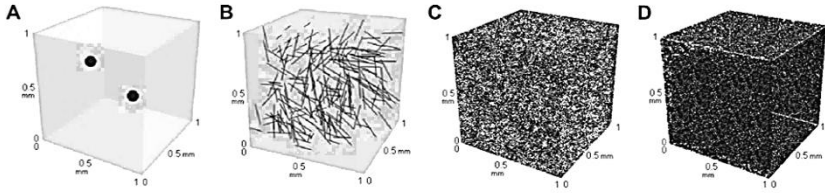


Fig. 14. Illustration of Different Size Nanostructured Carbon Particles Distribution Concentration 0.1% volume in 1 MM³.

- A – Agglomerated particles (Bayer, Nano-Vision Tech), $d = 100 \text{ MKM}$, $N = 2$; Surface=36S
 B – carbon fibers, $l = 5 \text{ MKM}$, $N = 255$; Surface=36S
 C – graphene plates, $l = 45 \text{ MKM}$, $\delta = 10 \text{ HM}$, $N = 6.6 \times 10^4$ Surface=1600S
 D – ART-Nano CNT, $l = 2 \text{ MKM}$, $d = 20 \text{ HM}$, $N = 4.4 \times 10^8$ Surface=100000S

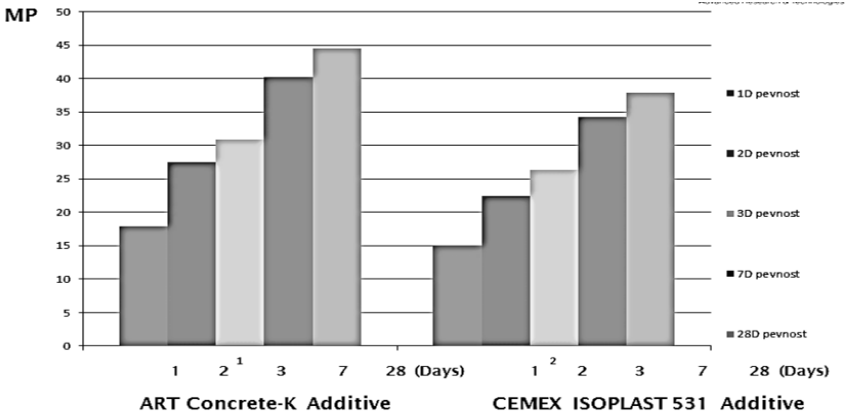


Fig. 15. Cemex-art carbon concrete additives strength tests results

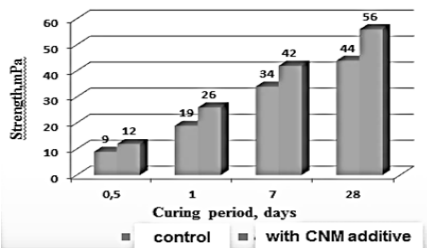


Fig. 16. Dependence of concrete strength on curing period for mixture #1 ART NANO CARBON content: 5.85 g/t of cement Strength increment on 28th day: 29%

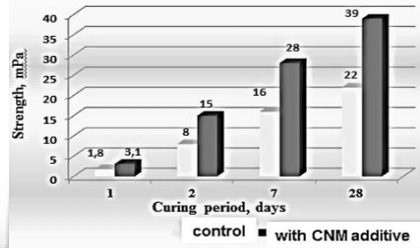


Fig. 17. Dependence of concrete strength on curing period for mixture #2 ART NANO CARBON content: 5.85 g/t of cement Strength increment on 28th day: 79%