Comparison
FNC - pocket plate – lead acid batteries

Design of NiCd Accumulators

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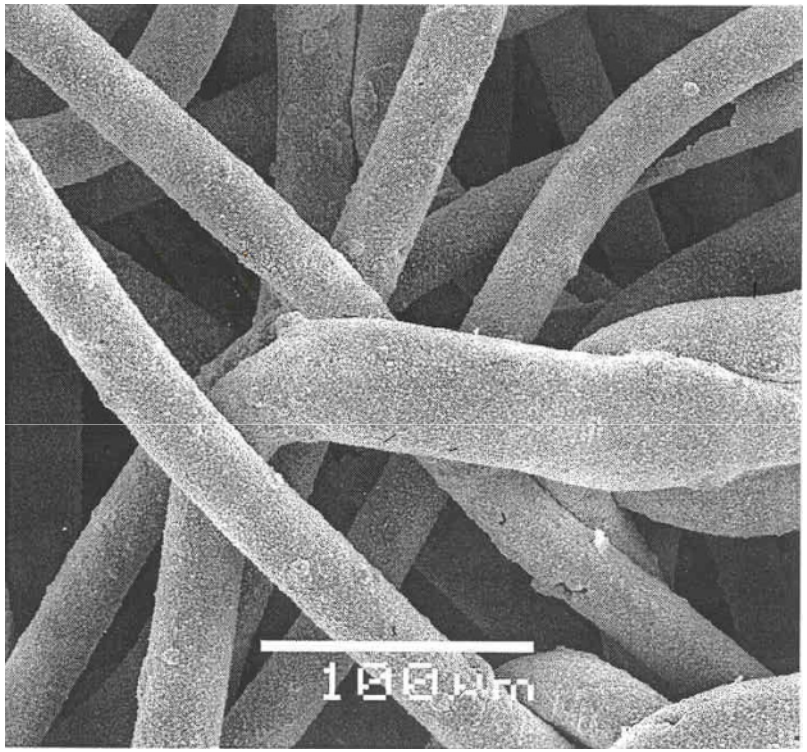
Advantages of the FNC fiber electrodes

- Thickness and size can easily be changed.
- Pure active material - no graphite
- High capacity over life time
- High conductor density
- High porosity
- High elasticity of the fibre-structure



Fibre structure of FNC electrode
as seen under an electron microscope

Design of NiCd Accumulators

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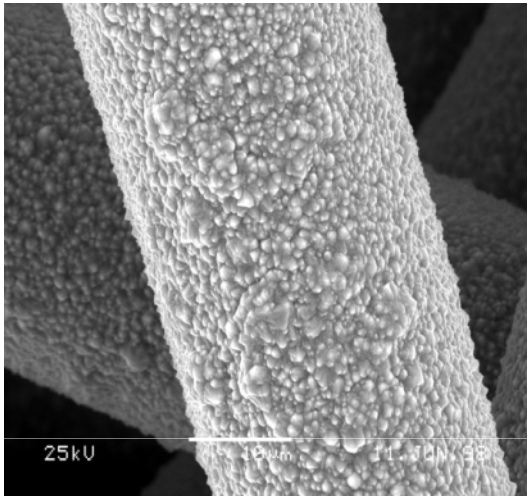
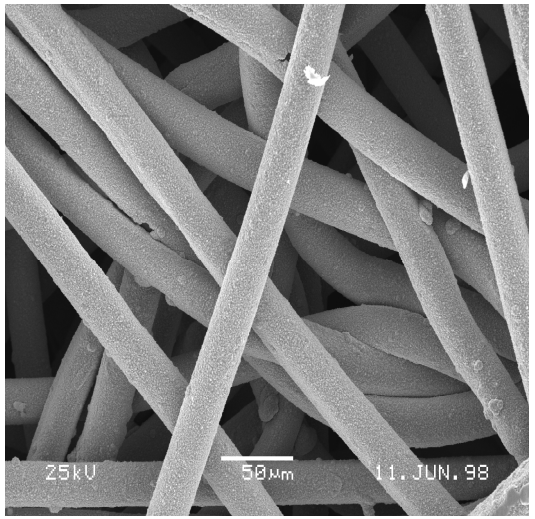
FNC Technology

- Optimum imbedding of active material in the conducting matrix
  (elastic structure)
- Adapting of performance type to customer benefits / requirements
- High life expectancy
  (charge exchange, calendar life)
- Fast recharge ability





Comparison lead acid - pocket plate - FNC

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	Lead Acid	Pocket-Plates	FNC
Temperature	-20 °C - +45 °C	-40 °C - +45 °C	-50 - +60 °C
Effects if working with higher ambient temperatures	▪ Lower service life	▪ Higher oxidation of graphite ->Higher carbonate ▪ Content in the electrolyte ->Lower capacity ▪ Changing of electrolyte ->Higher service costs for the customer ▪ Lower service life, due to capacity loss	▪ No carbonization ▪ No change of electrolyte ▪ No capacity drop ▪ No reduced service life
Service life at 20 °C	12-15 years	10-15 years	More than 20 years
Capacity looses after	1000 cycles	800-1200 cycles	2000 cycles

Comparison lead acid - pocket plate - FNC

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	Lead Acid	Pocket-Plates	FNC
Service	Equalizing charges	Change of electrolyte	Equalizing charges
Charging current	Max. 0,1 C	Max. 0,5 C	Fast charging methods are possible up to 7 C
Charging factor	1,2	1,4 – 1,6	1,2
Charging efficiency	83,30%	71,50%	83,30%
Overcharging	Not allowed	Allowed	Allowed
Deep discharging	Not allowed	Allowed	Allowed

Service Life - Cycle Life of NiCd Batteries

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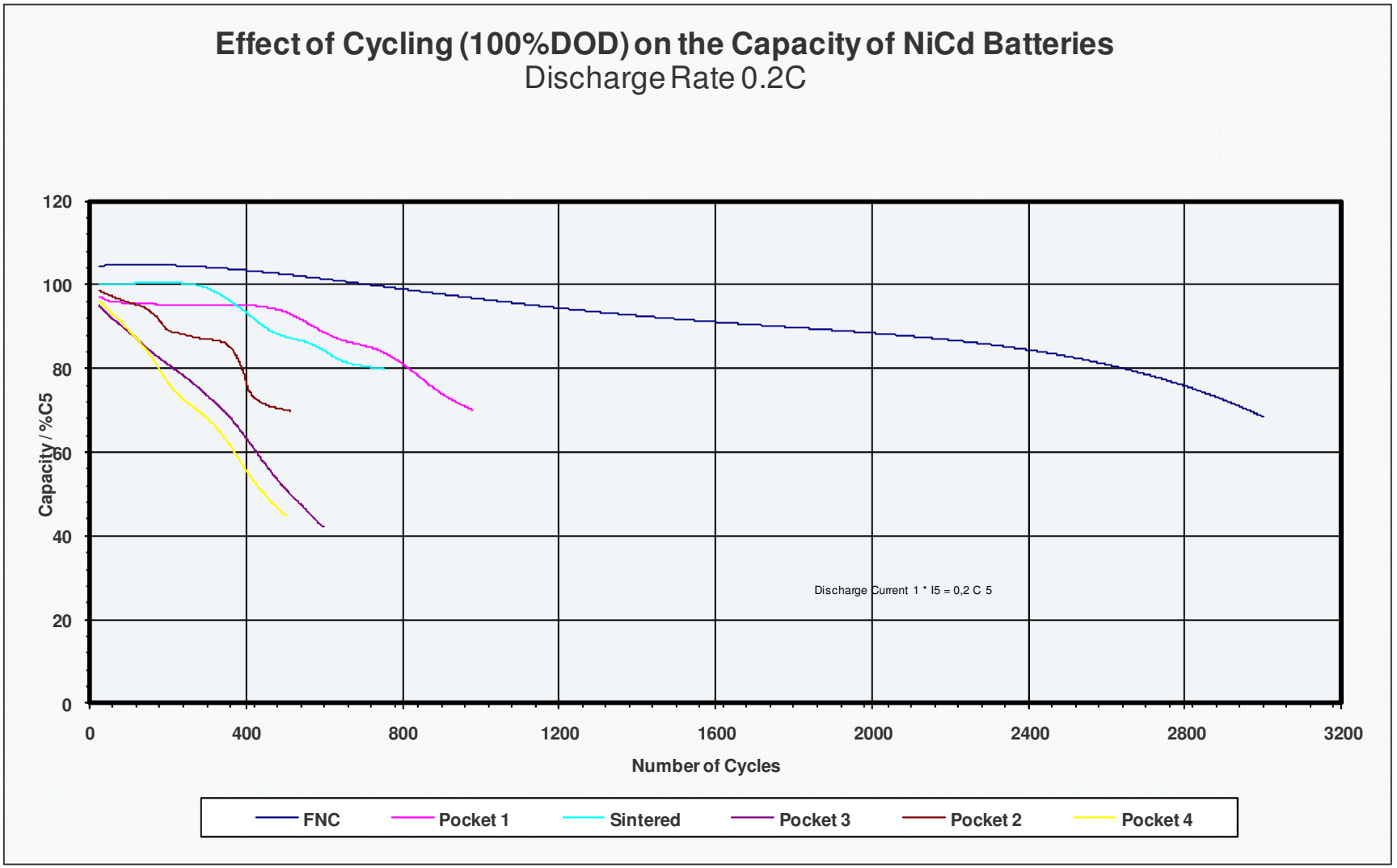

Discharging of FNC - Batteries