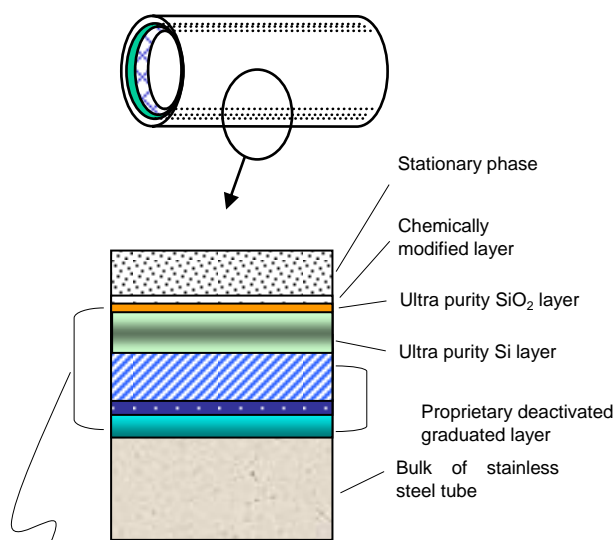


Inner Surface Structure of Ultra ALLOY® Metal Capillary Columns (Contamination durability)

The inner surface of Ultra ALLOY® metal capillary columns has been modified with our proprietary surface technology. Its surface structure is depicted below. (See Technical Note UAT-003E~005E for features of this treatments.)

- 1) The column inner surface is a chemically bonded graduated multi layer structure.
(Fig. 1 shows a cross sectional view of the column's inner surface. This surface structure provides high flexural and impact strength, and also has a resistance against sharp changes in temperature.)
- 2) The top layer is ultra pure SiO₂. (Refer to the element composition determined by Auger analysis shown in Fig.2)
- 3) Rough column surface has surface area tens of times larger than FS.
(See rough surface structure shown in Fig. 3. This is reason of the high durability of contaminants. See UAT-005E)



5~7 layer graduated multi layers
(Adjacent layers are chemically bonded and the interface between layers has graduated concentrations of both layers.)

Fig.1 Cross Sectional view of Ultra ALLOY® Metal Capillary Column's Inner Surface Model

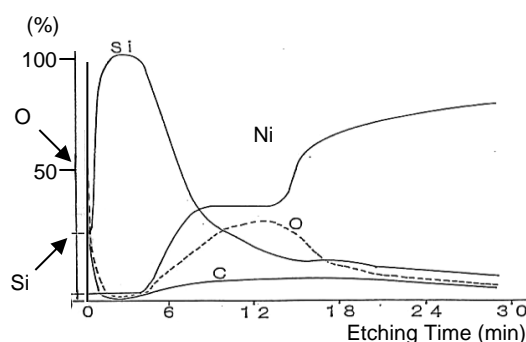
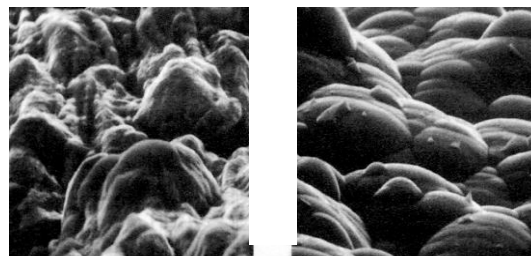


Fig.2. Auger Analysis of Graduated Multi Layer Surface (Element composition of top surface is SiO₂, and inner layers contain silicon.)



Before treatment → After treatment

Fig.3 SEM Image of Inner Surface
(Note rough surface even after treatments)

Keywords : Inner Surface Structure, Elemental Analysis, SEM Image, Contamination durability

Products used : Multi-functional pyrolyzer, Ultra ALLOY® metal capillary columns

Applications : General Analysis

Related technical notes :

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