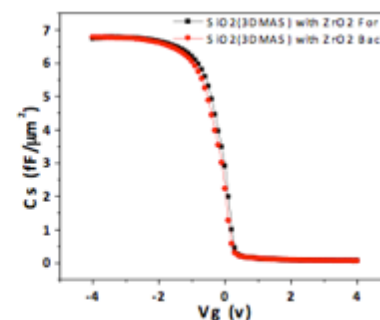
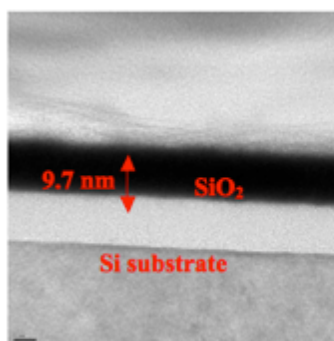


ALD & CVD PRECURSOR Value-Added Material Supply

A vertically-integrated ALD/CVD material company

- Front-end (synthesis, purification, analysis, manufacturing)
- Back-end (packaging, container, technical service)
- Joint development of new material/recipe/packaging to cater to each customer's needs



SiO₂/ZrO₂ hybrid high-K stack 3DMAS & TEMAZ

Left: 3DMAS based ALD SiO₂;

Right: 3DMAS/TEMAZ based ALD SiO₂/ZrO₂ hybrid high-K stack

Working closely to improve customers' tool performance, cost of ownership, and readiness for the next generation's manufacturing

ADD-ON LEVEL-SENSOR



- Precise-monitoring precursor usage
- Easy planning for ampoule change
- Average wafer count per ampoule ramps up from 22,000 to 30,000

PACKAGE SCALED-UP



- Continuous supply of source metal-organics
Increased tool uptime
– 50% less tool shutdown for bubbler replacement
- Increased safety & tool performance

PART OVERHAUL



- Eliminate risks of leaking and improve process performance
- Reduce Cost of Consumables by reclaiming valves/pipeline

■ The ALD/CVD Total Solution

Dielectrics PMD/IMD	• TEOS • TEPO / TMPO / TMPI • TEB / TEPO
Low K Dielectrics	• 3MS • 4MS • OMCATS • TOMCATS • DMDMOS • New CVD Low-k Smart- K 2.5
High K Dielectrics	• TAETO (Ta2O5 Precursor) • TEMAH/ HfCl4; TEMAZ/ ZrCl4 (ALD HfO2/ ZrO2 Precursor) /CpZr • TMA (Al2O3 Precursor)/ TMGa/DEZn • STO/ BST/ PZT Precursor; GST Precursor • SiCl4/ 3DMAS (Hf and Zr based silicates)
Metal Gate and Interconnect Metal	• TDMAT / TDEAT (TiN Precursor) • TiCl4 (Ti / TiN Precursor) • TBTDET, PDMAT (ALD TaN Precursor) • Al precursor – DMAH, TMA, MPA • Cu (I) / Cu (II) Precursor
Low-Temp Nitride/Oxide	• HCDS • 3DMAS • LTN/LTO • C8H22N2Si
Dopants	• POCI3

Valve Reclamation



Before cleaning

After cleaning

Reclaim and save! Many of our clients are enjoying the saving by reclaiming their tool valves and pipelines. We have reclaimed hundreds and thousands of used valves. How do we do it?

1. Cleaning: All the received parts will be disassembled for cleaning. Refurbishing: Consumable parts will be examined and repaired. New part will be replaced if needed
2. Inspection: 100% reclaimed valves will need to pass the leakage test.
3. A test report will be attached to ensure the quality of the reclamation.

MO Source

- TMG • TEG • TMA • TMIIn • DEZ • MgCp2
(Purity: 99.9999% (6N))

The Company

Since 1997, Nanmat Technology has been developing, producing, and marketing advanced nano-scale chemical products, processes, and services for Chemical Vapor Deposition (CVD), Atomic Layer Deposition (ALD), and nano organo-ceramic coatings. From synthesis, formulation, and polymerization to applications of nano-materials, the Group offers its customers a one-stop vertically integrated service.

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