Explore vacuum technology to the future
真空技術で未来を拓く

Semiconductor Sputtering
DRAM※1 wire / TiN Hard mask / UBM※2 / WLP※3

IC7200/7400/7500

ReRAM / Metal Gate / CMOS-IS※4 Sputtering

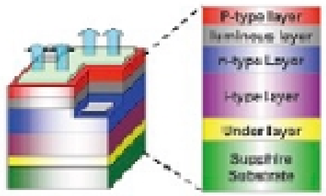
FC7100

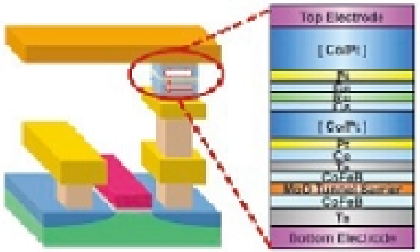
MRAM※5 Sputtering

NC7900

MRAM※5 Etching

NC8000





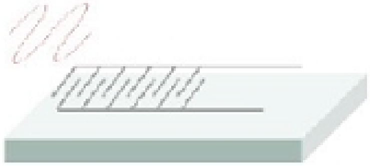
LED※6 Sputtering

EC8100

High Temp. Anneal for SiC Power Device

EC7200

SAW※7 filter Sputtering



EC7400

EB1000

EB1000

Sputtering for R&D / Small-Scale Production

※1 : Dynamic Random Access Memory, ※2 : Under Bump Metal, ※3 : Wafer Level Package, ※4 : Complementary Metal Oxide Semiconductor Image Sensor, ※5 : Magnetoresistive Random Access Memory, ※6 : Light Emitting Diode, ※7 : Surface Acoustic Wave,

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Room Temperature Diffusion Bonding by Atomic Rearrangements
原子再配列による常温拡散接合

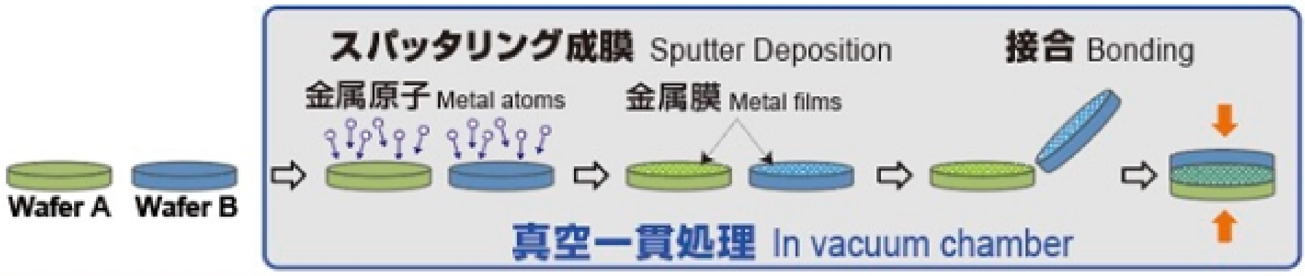
Atomic Diffusion Bonding Equipment BC7000
原子拡散接合装置 BC7000

加熱不要
Without heating

加圧不要
Without pressurising

異種材料
Different materials

真空一貫プロセス
In situ vacuum process



スパッタリング成膜 Sputter Deposition

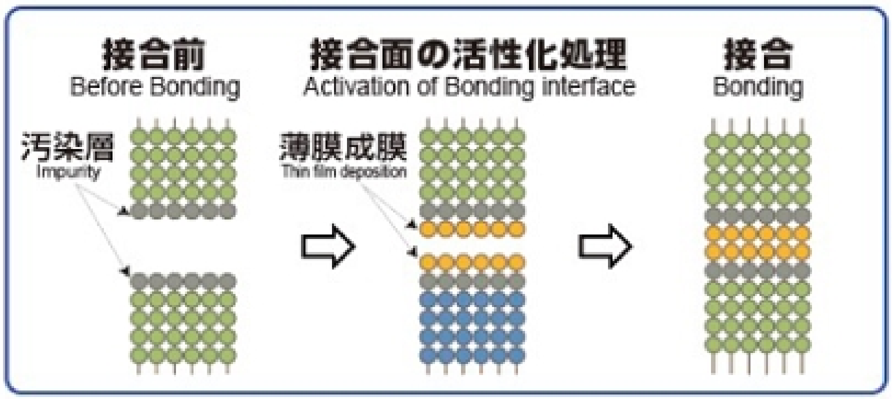
接合 Bonding

金属原子 Metal atoms

金属膜 Metal films

Wafer A　Wafer B

真空一貫処理 In vacuum chamber



接合前
Before Bonding

接合面の活性化処理
Activation of Bonding interface

接合
Bonding

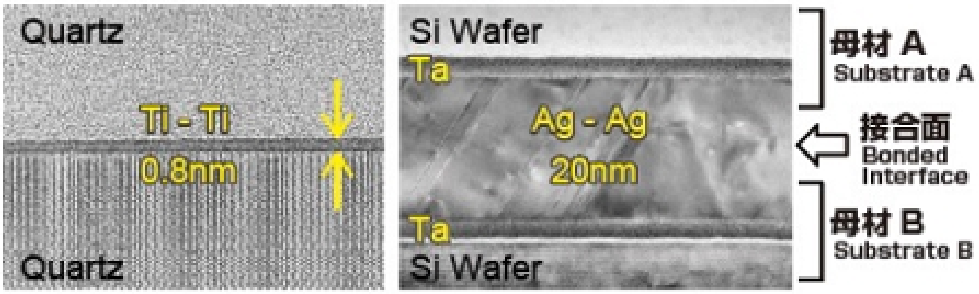
汚染層
Impurity

薄膜成膜
Thin film deposition

原子レベルでの接合が低温、無加圧で可能

Atomic Rearrangements Bonding without heating or pressure

接合例　Example for bonding



母材 A
Substrate A

接合面
Bonded Interface

母材 B
Substrate B

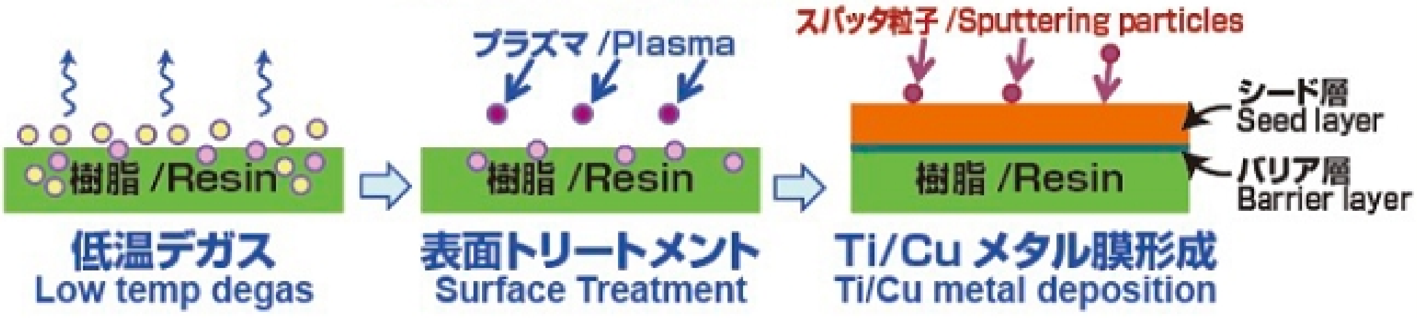
Limited Sale
BC 7000

ご提供：東北大学　学際科学フロンティア研究所　島津研究室
Courtesy of Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Shimatsu Labo.

Barrier・Seed metal formation on Large Package Panel
大型実装パネルへのバリア・シードメタル形成

Packaging Sputter Equipment EL3400
パッケージ向けスパッタリング装置 EL3400

銅メッキ下地膜形成
Cu seed Sputtering process

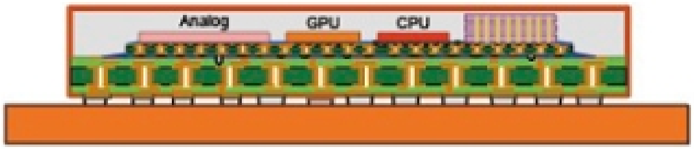


低温デガス
Low temp degas

表面トリートメント
Surface Treatment

Ti/Cu メタル膜形成
Ti/Cu metal deposition

- **■ 大型基板スパッタ装置**
  Large Board Sputter Equipment
- **■ 樹脂 / ガラス上への成膜**
  Deposition on Resin and Glass
- **■ 高密着性・高信頼性**
  High Adhesive and High Reliable

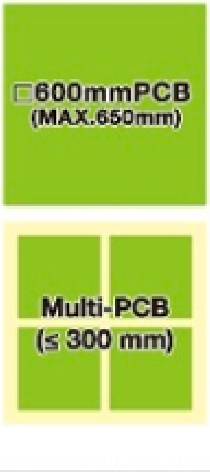


さまざまな実装プロセスのアプリケーション対応
New Solutions for Advanced Packaging

Limited Sale

EL3400

対応基板
Substrates for EL3400



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