

# Book of Mormon Census Project

## H0016, Book of Mormon

October 10, 2024

Brigham Young University, Provo, UT

Photolithograph Book of Mormon, 4.6cm x 4.6cm area

### Provenance:

Original Work. Created by University Engineering Department as project for department and students to practice photolithography, similar to imprinting computer microchips.

### Features and Notes:

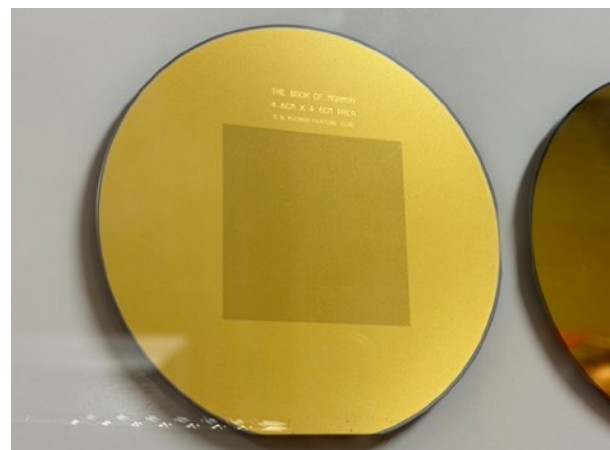
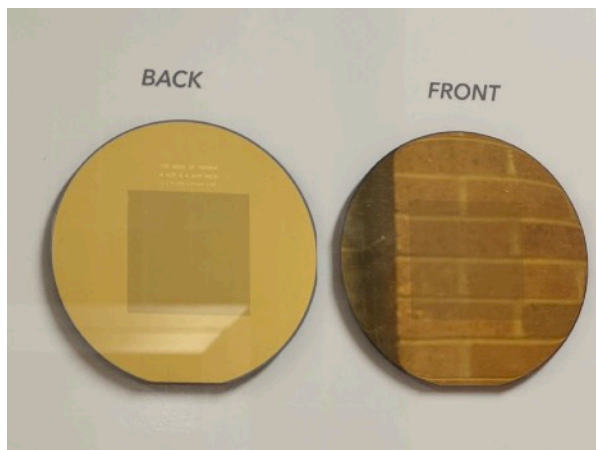
Title: Imprinted on wafer above text block "THE BOOK OF MORMON 4.6CM x 4.6CM AREA 5.0 MICRON FEATURE SIZE"

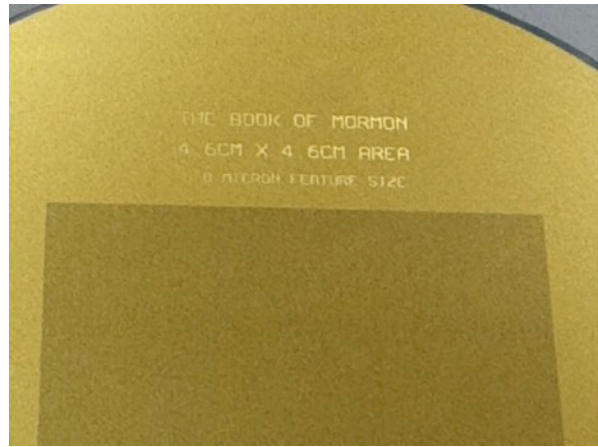
Text: Full text of the book of Mormon set within a 4.6cm square area. Printed in 5.0 micron font. All caps lettering.

Notes: Photolithography usage similar to microchip creation, the department converted the Book of Mormon text to imprint it on a 4 inch silicon wafer.

On Display at BYU Engineering building 4th floor in glass wall case. Old Testament and New Testament printed on similar silicon wafers, in accompanying display. Various duplicates made for students and faculty and also given to Salt Lake Church archives.

Additional pictures taken, including:





Words  
m x 6.7cm = 44.89 cm<sup>2</sup>

BACK FRONT

THE BOOK OF MORMON AN AC...  
S, TONGUES, AND PEOPLE, UNTO W...  
COWDERY DAVID WHITMER MARTIN...  
EY TAKE THE DAUGHTERS OF ISHMA...  
S WHEREFORE IT CAME TO PASS TH...  
A, AND MANY THINGS DID MY FATH...  
ULD KNOW, THAT AFTER THE LORD...  
SHOULD TAKE HIS FAMILY AND DE...  
10 AND HE ALSO SPAKE UNTO LE...  
HE MYSTERIES OF GOD, WHEREFORE...  
HALL BE A SCOURGE UNTO THY SEE...  
AND MY BRETHREN TOOK OUR JOUR...  
BECAUSE OF THE COMMANDMENTS OF...  
1 NEPHI 3:25 25 AND IT CAME...  
D HE CAN COMMAND FIFTY YEA...  
Book of Mormon Wafer  
100x Magnification

**NEW TESTAMENT**  
ALUMINUM PLATED LAYER- 300 nm

THE BOOK OF MORMON AN AC...  
S, TONGUES, AND PEOPLE, UNTO W...  
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TEXT  
PYTHON CODE  
CAD PROGRAM  
MASK WRITER  
PHOTOLITHOGRAPHY  
ETCHING  
DEPOSITION

**CREATING THE WAFERS**

**BACK TO GOLD**

BYU Electrical and Computer Engineering students created these "gold back matter" wafers. Are they back matter? They included them with scripture. That's right, each of these three wafers contains an entire book of scripture!

**OLD TESTAMENT**  
SILICON DIOXIDE LAYER- 325 nm  
3,259,350 Characters  
632,849 Words  
Area of wafer: 6.7cm x 6.7cm = 44.89 cm<sup>2</sup>

**THE BOOK OF MORMON**  
GOLD PLATED LAYER- 100 nm  
1,497,482 Characters  
291,522 Words  
Area of wafer: 4.6cm x 4.6cm = 21.16 cm<sup>2</sup>

**NEW TESTAMENT**  
ALUMINUM PLATED LAYER- 300 nm  
975,320 Characters  
188,550 Words  
Area of wafer: 3.0cm x 3.0cm = 9.00 cm<sup>2</sup>

**FUN FACT!**  
The Cleanroom here at BYU teaches students the process of using leveling wheels to flip a wafer through the photolithography process. It's a bit of a challenge, especially at this scale. Use of these wafers in the cleanroom is a great way to see the "gold back matter" in person.

**DID YOU KNOW?**  
A 100 micron feature size is 100 times smaller than the width of a human hair. And these wafers are made in a cleanroom that is 100 times smaller than the width of a human hair.

BYU Electrical and Computer Engineering

