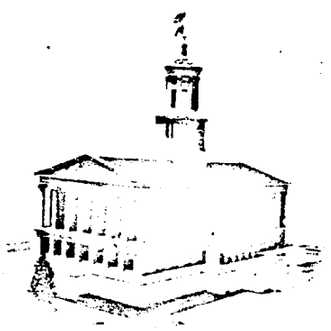
State of Tennessee



JUN 12 MISC ..... A* 30.00 * 30.00

Department of State

CERTIFICATE

The undersigned, as Secretary of State of the State of Tennessee, hereby certifies that the attached document was received for filing on behalf of SHOCKLEY-FRAZIER RESEARCH, INC. *(Name of Corporation)* *was duly executed in accordance with the Tennessee General Corporation Act, was found to conform to law and was filed by the undersigned, as Secretary of State, on the date noted on the document.*

THEREFORE, the undersigned, as Secretary of State, and by virtue of the authority vested in him by law, hereby issues this certificate and attaches hereto the document which was duly filed on February Twenty-Eighth, *19*73.

Secretary of State

IDENTIF. REFERENCE

JUN 12 2 19 PM '73

FELIX Z. [illegible]
DAVIDSON COUNTY, TENN.

C 10810

Form No. 6
Section 48-303
For Profit
or
Not for Profit

ARTICLES OF AMENDMENT TO THE CHARTER

of

Shockley-Frazier Research, Inc.

Pursuant to the provisions of Section 48-303 of the Tennessee General Corporation Act, the undersigned corporation adopts the following articles of amendment to its charter:

1. The name of the corporation is

Shockley Research, Inc.

2. The amendment adopted is (insert amendment).

Change in corporate name from Shockley-Frazier Research, Inc.
to Shockley Research, Inc.

3. The amendment was duly adopted (~~at a meeting~~) (by the unanimous written consent) of the (shareholders) ~~(members)~~ on February 26, , 19 73 (strike inapplicable words).

4. If a corporation for profit, the manner, if not set forth insuch amendment, in which any exchange, reclassification or cancellation of issued shares provided for in the amendment shall be effected is as follows:

None

73 FEB 28 PM 2 16

BOOK 4718 PAGE 47

5. If the amendment is not to be effective when these articles are filed by the Secretary of State, the date it will be effective is _____, 19___ (not later than thirty (30) days after such filing).

Dated February 26, 1973, 19 73.

Shockley Research, Inc.
(Name of Corporation)

By John N. Shockley President
(Title)
John N. Shockley, Jr., President

1973 FEB 28 PM 2 16

BOOK 4718 PAGE 48

Mail: Ungraham, Fields, Jones & Corbett
Suite 1720, Parkway Towers
Nash. Tn. 37219

State of Tennessee

ARTICLES OF AMENDMENT TO THE

CHARTER

OF

SHOCKLEY-FRAZIER RESEARCH, INC.

(name changed to)

SHOCKLEY RESEARCH, INC.

RECEIVED FEE, $ 10.00

RECEIVED TAX, $ _____

TOTAL, $ 10.00