

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MACRONIX INTERNATIONAL CO., LTD., MACRONIX ASIA LIMITED,
MACRONIX (HONG KONG) CO., LTD. and MACRONIX AMERICA, INC.
Petitioners

v.

SPANSION LLC
Patent Owner

Case No. IPR2014-00103
Patent Number 6,369,416

Before KRISTEN L. DROESCH, JUSTIN T. ARBES, and
RICHARD E. RICE, *Administrative Patent Judges*.

**PATENT OWNER'S PRELIMINARY RESPONSE
UNDER 37 C.F.R. § 42.107**

EXHIBIT

**MACRONIX
IPR2014-00898
MX027II-1019**

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Pursuant to 37 C.F.R. § 42.107, Patent Owner Spansion LLC submits this Preliminary Response to the above-captioned Petition for *Inter Partes* Review of U.S. Patent No. 6,369,416 (“Pet.”, Paper 1).

I. Introduction

On its face, Petitioner’s¹ submission fails to provide the Board with the basic evidence required to institute any *inter partes* review. If the Board nonetheless institutes trial on any of the challenged claims, Patent Owner will address in detail in its § 42.120 Response the numerous substantive errors and shortcomings that underlie each of Petitioner’s arguments and its purported evidence. In this paper, however, Patent Owner addresses only the meaning of certain of the challenged claims’ pertinent terms, and some fundamental shortcomings of the Petition under Rule 42.107: in particular, Petitioner’s failure to demonstrate, as to *any* of the challenged claims, a reasonable likelihood of success on any asserted ground of invalidity. Because of this clear threshold failure, the Petition should be denied and no *inter partes* review should be instituted under 35 U.S.C. § 314.

The challenged patent, U.S. Patent No. 6,369,416 (“the ’416 patent”), relates to a semiconductor device with contacts having a sloped profile. The sloped profile permits greater density of structures by avoiding charge gain or loss between the

¹ Macronix International Co., Ltd., Macronix Asia Limited, Macronix (Hong Kong)

Co., Ltd., and Macronix America, Inc. are collectively referred to herein as “Petitioner.”

contact and adjacent structures. *See, e.g.*, MX416-1001 at 2:33-39, 4:50-67.

In the process of trying to increase the density of memory cells on a device, engineers have been looking to solve the problems created by placing the components of the device closer to one another. *See, e.g., id.* at 1:35-2:19. The four inventors on the '416 Patent (Angela Hui, Tuan Pham, Mark Ramsbey, and Yu Sun) were among those engineers trying to meet that long-felt need – and they succeeded.

As shown in the figure below, a memory cell can be composed of source and drain regions (shown in orange) separated by a substrate (blue) and a gate stack (green) – which includes at least one gate in a stacked structure. MX416-1001 at 1:12-31.

The memory cell works by storing charge (or not storing charge) in a charge storage layer of the gate stack such that the memory cell can indicate either a “0” or a “1.” A contact (light blue) leading to either the source or the drain of the device can be electrically connected to the source and/or the drain, for example, and an insulating layer (pink) substantially surrounds the gate stacks – insulating them from the contact. *See* MX416-1001 at 1:26-34.²

² All color on the patent figures and emphasis in quotations herein has been added, unless otherwise stated.

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