UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION
Petitioner

v.

ZOND, LLC
Patent Owner

U.S. Patent No. 7,604,716

Inter Partes Review Case No. 2014-00522

PATENT OWNER's PRELIMINARY RESPONSE UNDER 37 CFR § 42.107(a)

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I. Introduction

The present petition for *inter partes* review of U.S. Patent No. 7,604,716 ("the '716 patent") is the third of four petitions filed by Intel challenging the '716 patent. This petition challenges two of the patent's four independent claims (nos. 14, 26) and several other claims that depend from claims 14, 26.

The challenges are based on two prior art references, Mozgrin[1] and Wang,[2] that were already considered by the Patent Office, combined with a prior art article by Kudryavtsev.[3] As explained in detail below, the challenged claims require, inter alia, a multi-stage ionization process in which atoms in a weakly ionized gas are first excited from the ground state before being ionized to form a strongly ionized plasma, but without developing an electrical breakdown condition. This is in contrast to a conventional ionization process in which atoms are ionized directly from the ground state, without first achieving an excited state.

The Petition tacitly acknowledges that neither primary reference, Mozgrin nor Wang, explicitly discusses or even hints of such an ionization

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[1] Ex. 1203, Mozgrin.

[2] Ex. 1204, Wang patent No. 6,413,382 ("Wang").

[3] Ex. 1205, Kudryavtsev.

process. So the Petition instead argues that Mozgrin and Wang inherently implement the claimed multi-stage ionization, citing to Kudryavtsev as proof. But as a matter of law, "inherency may not be established by probabilities or possibilities."[4] As the Board observed in a similar case: "it is well settled that the 'very essence of inherency is that one of ordinary skill in the art would recognize that a reference *unavoidably* teaches the property in question."[5] "The mere fact that a certain thing may result from a given set of circumstances is not sufficient."[6]

By this standard, the Petition falls far short of proving inherency. As we explain below, Kudryavtsev's calculations predict that his tubular electrode structure may or may not yield multi-stage ionization depending on a variety of conditions, namely, the gas pressure p, the radius R of the tubular electrode structure, the strength of the applied electric field E, and the density of ground state argon atoms, n_1. As shown in Kudryavtsev's figure 6 below, direct ionization predominates under the conditions represented by region II of this

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[4] *Id*.

[5] *UBE Maxwell Co. v. LG Chem, LTD*, IPR203-00470, Paper 25, page 12, *citing Agilent Technologies, Inc. v. Affymetrics, Inc.*, 567 1366, 1383 (Fed. Cir. 2009).

[6] *In re Oelrich*, 666 F.3d 578, 581 (CCPA 1981).

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