TRUSTEES OF BOSTON UNIVERSITY v. EVERLIGHT ELECTRONICS CO., LTD, Appeal Nos. 2016-2576 to 2582, 2591 to 2595 (Fed. Cir. July 25, 2018). Before Prost, Moore, and Reyna. On appeal from D. Mass. (Judge Saris).

Background:

Trustees of Boston University (BU), owner of a patent drawn to a LED semiconductor device sued Everlight for patent infringement.

Following a jury trial directed to only one claim of the 21 claim patent, the jury found that Everlight infringed and that invalidity was not proven. Everlight then renewed a previous motion for judgment as a matter of law (JMOL) on the ground that the patent was invalid for not meeting the enablement requirement of 35 USC 112, first paragraph. The district court denied the motion and Everlight appealed to the Federal Circuit. BU cross-appealed on other issues.

BU's invention was drawn to solving a lattice mismatch problem between a substrate and a monocrystalline gallium nitride (GaN), epitaxially grown thereon. BU's solution involved a two-step process in which a buffer layer of amorphous GaN was deposited at a low temperature and then the amorphous layer was exposed to a higher temperature to crystallize the GaN, after which monocrystalline GaN could then be epitaxially grown thereon.

The claim before the jury, in pertinent part, is as follows:

> A semiconductor device comprising:
> a substrate . . . ;
> *a non-single crystalline buffer layer*, comprising a first material grown on said substrate, the first material . . . of gallium nitride; and
> a growth layer *grown on* the buffer layer, the growth layer comprising gallium nitride . . . .

(Italics by the court.)[1]

The court construed the first italicized term to have three possible meanings (polycrystalline, amorphous, or a mixture thereof) and the second italicized term to have two possible meanings (a monocrystalline growth layer formed directly or via an intervening layer), resulting in six possible permutations for the two italicized terms. The enablement issue involved only one of the permutations, i.e., a monocrystalline growth layer formed directly on an amorphous buffer layer.

Issue/Holding:

Did the district court err in finding infringement and denying the JMOL motion? Yes and yes, reversed-in-part and dismissed-in-part.

Discussion:

BU argued that it was sufficient for enablement purposes that only one of the six permutations be satisfied. The Federal Circuit disagreed, finding that "the specification must enable the full scope of the claimed invention." The Court found that the evidence in the record was clear that as of the patent's effective filing date, it was believed to be impossible to epitaxially grow a layer directly on an amorphous layer. While there was some conclusory or unsupported evidence that some persons were able to achieve such epitaxial growth years thereafter, the Court found that BU did not suggest that their specification taught how to do so without undue experimentation. BU's cross-appeal was dismissed as moot.

[1] The remaining patent claims also limited this element to "a non-single crystalline buffer layer."