UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/994,018	06/13/2013	Bodo Richter	FR6653	3875

24114 7590 11/27/2019

LyondellBasell Industries
Legal IP Department
1221 McKinney Street, Suite 700
LyondellBasell Tower
Houston, TX 77010

EXAMINER	
QIAN, YUN	

ART UNIT	PAPER NUMBER
1732	

NOTIFICATION DATE	DELIVERY MODE
11/27/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

legal-IP@lyondellbasell.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte BODO RICHTER and HEIKE GREGORIUS

Appeal 2018-007748
Application 13/994,018
Technology Center 1700

Before N. WHITNEY WILSON, BRIAN D. RANGE, and LILAN REN, *Administrative Patent Judges.*

REN, *Administrative Patent Judge.*

DECISION ON APPEAL[1]

[1] The record on appeal includes the Specification of June 13, 2013 ("Spec."), the Final Action of November 13, 2017 ("Final Act."), Appeal Brief of April 11, 2018 ("Appeal Br.") and the Examiner's Answer of May 22, 2018 ("Ans."). No Reply Brief was filed.

STATEMENT OF THE CASE

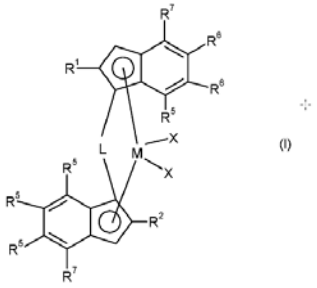
Pursuant to 35 U.S.C. § 134(a), Appellant[2] appeals from the Examiner's decision to reject claims 1, 4 and 8–10. Final Act. 1. We have jurisdiction under 35 U.S.C. § 6(b). An oral hearing was held on October 23, 2019.

We AFFIRM.

CLAIMED SUBJECT MATTER

The claims are directed to a method of preparing metallocene catalysts. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A method of preparing a supported catalyst for polymerizing olefins comprising:
>
> (a) firstly combining a borinic acid compound with excess alkylalumoxane to produce an activator mixture; and
>
> (b) secondly combining the activator mixture with a calcined or a chemically treated silica, followed by a metallocene complex to give the supported catalyst;
>
> wherein the metallocene complex corresponds to formula (I),



(I)

[2] We use the word "Appellants" to refer to "Applicants" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Basell Polyolefine GmbH, Brühler Strasse 60, Wesseling, Germany 50389. Appeal Br. 2.

where M is zirconium, hafnium or titanium, X are identical or different and are each, independently of one another, hydrogen or halogen or an-R, -OR, -$OS0_2CF_3$, –OCOR, –SR, $–NR_2$ or$–PR_2$ group, where R is linear or branched C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl which is optimally substituted by one or more C_1-C_{10}-alkyl radicals, or C_3-C_{20}-cycloalkyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl or C_7-C_{20}-arylalkyl and may contain one or more heteroatoms of Groups 13–17 of the Periodic Table of the Elements or one or more unsaturated bonds, where the two radicals X may also be joined to one another,

L is a divalent bridging group selected from the group consisting of C_1-C_{20}-alkylidene radicals, C_3-C_{20}-cycloalkylidene radicals, C_6-C_{20}-arylidene radicals, C_7-C_{20}- alkylarylidene radicals and C_7-C_{20}-arylalkylidene radicals, which may contain heteroatoms of Groups 13-17 of the Periodic Table of the Elements, or a silylidene group having up to 5 silicon atoms,

R^1 is linear or branched C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl which is optimally substituted by one or more C_1-C_{10}-alkyl radicals, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl or C_7-C_{20}- arylalkyl and may contain one or more heteroatoms of groups 13-17 of the Periodic Table of the Elements or one or more unsaturated bonds,

R^2 is a group of the formula $-C(R^3)_2R^4$, where

R^3 are identical or different and are each, independently of one another, linear or branched C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl which is optimally substituted by one or more C_1-C_{10}-alkyl radicals, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl or C_7-C_{20}- arylalkyl and may contain one or more heteroatoms of Groups 13-17 of the Periodic Table of the Elements or one or more unsaturated bonds, or two radicals R^3 is optimally joined to form a saturated or unsaturated C_3-C_{20}-ring, and

R^4 is hydrogen, or linear or branched C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl which is optimally substituted by one or more C_1-C_{10}-alkyl radicals, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl or C_7-

C_{20}-arylalkyl and may contain one or more heteroatoms of Groups 13-17 of the Periodic Table of the Elements or one or more unsaturated bonds, and

R^5 are identical or different and are each, independently of one another, hydrogen or halogen or linear or branched C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl which is optimally substituted by one or more C_1-C_{10}-alkyl radicals, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl or C_7-C_{20}-arylalkyl and may contain one or more heteroatoms of Groups 13-17 of the Periodic Table of the Elements or one or more unsaturated bonds, and

R^6 are identical or different and are each, independently of one another hydrogen, linear or branched C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl which is optimally substituted by one or more C_1-C_{10}-alkyl radicals, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl or C_7-C_{20}-arylalkyl and may contain one or more heteroatoms of Groups 13-17 of the Periodic Table of the Elements or one or more unsaturated bonds, or the two radicals R^6 is optimally joined to form together with the atoms connecting them a saturated or unsaturated C_5-C_{20} ring,

R^7 are identical or different and are each, independently of one another, halogen or linear or branched C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl which is optimally substituted by one or more C_1-C_{10}-alkyl radicals, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl or C_7-C_{20}-arylalkyl and may contain one or more heteroatoms of Groups 13-17 of the Periodic Table of the Elements or one or more unsaturated bonds.

REFERENCES

The prior art references relied upon by the Examiner are:

Name	Reference	Date
Kristen	US 6,444,764	Sept. 3, 2002
Nagy	US 7,858,718	Dec. 28, 2010
Lee	US 2006/0052238 A1	Mar. 9, 2006

REJECTION

Claims 1, 4 and 8–10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kristen, in view of Nagy, and further in view of Lee. Final Act. 4.

OPINION

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Cf. Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential) (cited with approval in *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) ("[I]t has long been the Board's practice to require an applicant to identify the alleged error in the examiner's rejections.")). After having considered the evidence presented in this Appeal and each of Appellant's contentions, we are not persuaded of reversible error, and we affirm the Examiner's § 103 rejection for the reasons expressed in the Final Office Action and the Answer. We add the following primarily for emphasis.

Appellant argues that the Examiner reversibly erred because "the disclosures of Kristen and Lee do not teach or even suggest the use of borinic acid, or provide any disclosure for borinic acid per se, as required by

the method of claim 1."[3] Appeal Br. 9 (emphases removed). Appellant argues that instead of the recited "borinic acid compound," Kristen "only provides for boronic acid[.]" *Id.* Around October 16, 2019 (after the Appeal Brief was filed and before oral hearing), Appellant provided a demonstrative in support of this argument. FR6653 Exhibit.[4]

We are not persuaded by this argument because the Examiner acknowledges that Kristen does not disclose the recited "boronic acid compound" but finds that it is suggested by the combined teaching of Kristen and Nagy. *See* Final Act. 4 (finding that Nagy teaches "catalyst useful for polymeriz[ing] olefins comprising an activator mixture obtained by combining a boron compound including bis(pentafluorophenyl)borinic acid and pentafluorophenyl boronic acid and mixture of with excess alumoxane" and explaining that a skilled artisan would have "combine[d] the bis(pentafluorophenyl)borinic acid of Nagy et al. with the catalyst system taught by Kristen et al as an alternative boron acid compound and would expect to achieve the same results. And the catalyst taught by Nagy et al. has Lewis acidity with excess of MAO and it enables facile production of highmolecular-weight polyolefin") (citing Nagy 2:5–60); *see also* Ans. 5–6 (stating the same).

Appellant's argument—as presented in the Appeal Brief—is not persuasively developed. Appellant's conclusory argument does not present factual evidence (e.g., a reference or a declaration to support the argument) to explain why the Examiner reversibly erred in evaluating the references.

[3] Appellant argues claims 1, 4 and 8–10 as a group with claim 1 as representative. Appeal Br. 5.
[4] Appellant designates the exhibit as "Company confidential."

For example, Appellant does not address, much less dispute, the Examiner's statement that Nagy teaches a "catalyst useful for polymeriz[ing] olefins comprising an activator mixture obtained by combining a boron compound including bis(pentafluorophenyl)borinic acid and pentafluorophenyl boronic acid and mixture of with excess alumoxane." *Compare* Appeal Br. 9–10, *with* Final Act. 4. Appellant does not address the Examiner's statement that "the catalyst taught by Nagy et al. has Lewis acidity with excess of MAO and it enables facile production of high molecular-weight polyolefin." *Compare* Appeal Br. 9–10, *with* Final Act. 4.

Appellant's argument is solely based on the structural distinction between boronic and borinic compounds which attacks only one of the cited references, rather than considering what the combined references would have suggested to the person of ordinary skill in the art, which forms the basis of the rejection. "Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references." *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). We are therefore not persuaded that reversible error has been identified.

We are also not persuaded that "as would be appreciated by the skilled artisan the boronic acid compounds of Kristen *cannot be used* to prepare the borinic compounds of the instant invention." Appeal Br. 9. Appellant's argument is unsupported by factual evidence. "Attorneys' argument is no substitute for evidence." *Johnston v. IVAC Corp.*, 885 F.2d 1574, 1581 (Fed. Cir. 1989). Without evidentiary support, we are not persuaded that reversible error has been identified. We further note that, contrary to Appellant's assertion, the Examiner's rejection is based on the conclusion that a skilled

artisan would have found it obvious "to combine the bis(pentafluorophenyl)borinic acid of Nagy et al. with the catalyst system taught by Kristen et al as an alternative boron acid compound and would expect to achieve the same results." Final Act. 4.

Appellant's sole argument with regard to Nagy does not address the recited "borinic acid compound" but that "Nagy does not remedy the deficiencies of Kristen and Lee, as the cited reference exclusively teaches the use of *non-metallocene catalysts*, which cannot be substituted for or regarded as suggestive of the required *metallocene* system of claim 1." Appeal Br. 10. The argument is again conclusory and without factual support showing that the boronic compound is prohibited from being used with a metallocene catalyst. In fact, the Examiner finds that Kristen uses a boronic compound whereas Nagy uses both boronic and borinic compounds and a skilled artisan "would expect to achieve the same results" by combining these teachings. Final Act. 4; Nagy 13:14–15. "If a person of ordinary skill can implement a predictable variation [of a known work], § 103 likely bars its patentability." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). Appellant has not provided factual evidence showing otherwise.[5]

[5] We emphasize that we are constrained to consider only the arguments raised in the Appeal Brief. *See Ex parte Nakashima*, 93 USPQ2d 1834 (BPAI 2010) (informative) (explaining that arguments and evidence not timely presented in the principal Brief will not be considered when filed in a Reply Brief, absent a showing of good cause explaining why the argument could not have been presented in the Principal Brief); *Ex parte Borden*, 93 USPQ2d 1473, 1477 (BPAI 2010) (informative) ("Properly interpreted, the Rules do not require the Board to take up a belated argument that has not been addressed by the Examiner, absent a showing of good cause.").

Moreover, the Examiner acknowledges that neither Nagy nor Kristen "specifically disclose[s] the zirconium metallocene complex supported on a calcined and chemical treated silica" but finds that Lee teaches the recited metallocene complex. Final Act. 5; Ans. 10–11. Appellant does not dispute this finding. *See* Appeal Br. 10. No reversible error has been identified here.

We are also not persuaded by Appellant's argument that the references "teach away from the claimed subject matter[.]" Appeal Br. 11. "Under the proper legal standard, a reference will teach away when it suggests that the developments flowing from its disclosures are unlikely to produce the objective of the applicant's invention. A statement that a particular combination is not a preferred embodiment does not teach away absent clear discouragement of that combination." *Syntex (U.S.A.) LLC v. Apotex, Inc.*, 407 F.3d 1371, 1380 (Fed. Cir. 2005) (citations omitted). Appellant has not elaborated on why Kristen, Lee, and Nagy each "suggests that the developments flowing from its disclosures are unlikely to produce the objective of the applicant's invention." *Id.* We are therefore not persuaded that the references teach away from the recited subject matter.

Appellant lastly argues that there are certain "surprising benefits associated with Applicant's claimed methodology[.]" Appeal Br. 11. Appellant argues that there are a comparison between embodiments of claim 1 and certain comparative examples show improvements in "approximately *200-5400% improvements* in catalytic activity, *130-150%* increases in polydispersity and *190-230%* increases in molecular weight[.] *Id.*

"To be particularly probative, evidence of unexpected results must establish that there is a difference between the results obtained and those of the closest prior art, and that the difference would not have been expected by

one of ordinary skill in the art at the time of the invention." *Bristol-Myers Squibb Co. v. Teva Pharms. USA, Inc.*, 752 F.3d 967, 977 (Fed. Cir. 2014). "[I]t is not enough to show that results are obtained which differ from those obtained in the prior art: that difference must be shown to be an unexpected difference." *In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972).

In this case, the Examiner finds that the comparisons in support of the unexpected results argument "are not commensurate in scope with the breadth of the claims[.]" Ans. 12. The Examiner lists four categories, namely, the particular boronic acid, alkyl alumoxane, zirconocene, and molar ratio of AI/B, for which the examples in the comparison are not commensurate in scope. *Id.* We further note that the record does not show that the comparison cited by Appellant is based on "the closest prior art." *See Squibb*, 752 F.3d at 977. We are therefore not persuaded that the Examiner reversibly erred in determining that the comparisons in support of the unexpected results argument are not persuasive.

In reaching our decision, we again emphasize that by statute, this Board functions as a board of review, not a de novo examination tribunal. 35 U.S.C. § 7(b)("The [board] shall . . . review adverse decisions of examiners upon applications for patents . . . ."). "[I]t has long been the Board's practice to require an applicant to identify the alleged error in the examiner's rejections." *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011). In this case, the arguments presented in the Appeal Brief do not sufficiently identify reversible error in the Examiner's fact findings in support of the rejection. *See Ex parte Frye*, Appeal No. 2009-006013, 2010 WL 889747, *4 (BPAI 2010) (precedential) ("Filing a Board appeal does not, unto itself, entitle an appellant to *de novo* review of all aspects of a rejection. If an appellant fails

to present arguments on a particular issue — or, more broadly, on a particular rejection — the Board will not, as a general matter, unilaterally review those uncontested aspects of the rejection.").

CONCLUSION

The Examiner's rejection is AFFIRMED.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 4, 8–10	103(a)	Kristen, Nagy, Lee	1, 4, 8–10	

FINALITY AND RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED