

## REVIEWER REPORTS

### EVALUATION:

#### Reviewer's Responses to Questions

1. Please rate the importance of the reported results

Reviewer #1: Very important (top 10%)

Reviewer #2: Very important (top 10%)

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2. Please rate the citation of previous publications

Reviewer #1: Appropriate

Reviewer #2: Appropriate

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3. Please rate the length of the manuscript

Reviewer #1: Concise

Reviewer #2: Concise

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4. Please rate the verification of hypotheses and conclusions by the presented data

Reviewer #1: Fully consistent

Reviewer #2: Fully consistent

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5. Please indicate which other journal you consider more appropriate

Reviewer #1:

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Reviewer #2: (No Response)

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6. Please rate the quality of the X-ray data

Reviewer #1:

- X-ray data correct

Reviewer #2:

- X-ray data correct
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7. Please indicate whether you have included attachments

Reviewer #1:

- No

Reviewer #2:

- No

COMMENTS TO AUTHOR:

Reviewer 1: This manuscript describes the synthesis of phosphaborene, which was catalyzed by NHC to remove TMSCI. Furthermore, the authors show the reactivity of phosphaborene with DMAP generating another heterocyclic

compound. The DFT calculation was carried out to understand the reactivity. Overall, I think this work shows a novel approach to accessing interesting phosphaborene species, which is appealing to the main group chemistry society. Therefore, I would recommend the publication of the manuscript.

Reviewer 2: The manuscript by Liu and coworkers details an intramolecular Lewis base-stabilized phosphaborene. I find this contribution very interesting! There are two key points: a) the catalytic base-promoted loss of TMS-Cl to form 4 and b) FLP-like activation of DMAP. I only have minor suggestions for improvement. The compounds are well characterized, and I'm pleased to recommend publications with only very minor revisions.

1. The authors should clearly state if the reaction of 3 to 4 will proceed without the carbene, for example, with heat or UV light.
2. In Figure 2 and 6 the authors should provide the byproducts under the arrows as they did in Figure 4.
3. Line 54, right column - "of" instead of "if"
4. The obvious question is does this work with bases other than DMAP? This would be very interesting if expanded in forthcoming publications. For example, small molecules such as CO, etc.

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