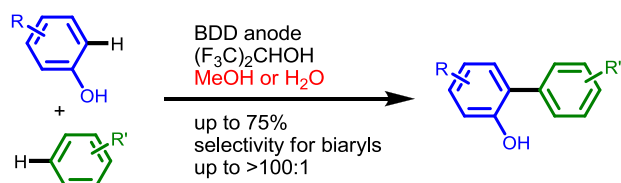


Anodic C,C-Cross-Coupling Reactions:
 New Advances in Direct Non-Symmetric Synthesis
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Cross-coupling reactions are often used transformations for the synthesis of biaryls. In general, toxic transition-metal complexes such as palladium-based catalysts are necessary for the formation of biaryls. Furthermore, most-frequently used methods need activating functionalities in the coupling partners. The resulting leaving groups mostly contribute to the toxic waste.



Thus, we developed a method for the first anodic oxidation on boron-doped diamond electrodes to form non-symmetric biaryls without waste-producing leaving groups in the reagents. Via dehydrodimerisation it is possible to cross-couple phenol derivatives with electron-rich aryls [1]. The wide range of coupling-reagents and the possibility to recycle unconverted substrates as well as the electrolyte [2] make this electrochemical C,C-coupling reaction highly attractive in ecological and economical terms [3].

The electrochemical preparation of biaryls, the influence of protic additives on electrochemical cross-coupling reactions, potent substitution patterns, and current developments will be presented.

References

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