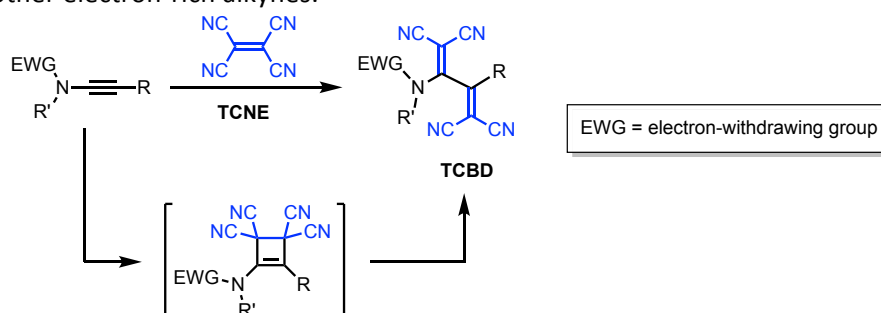


**Postdoctoral position (2 years)**  
*Synthesis and study of new 1,1,4,4-tetracyanobutadienes*

Institut des Sciences Chimiques de Rennes, COInt team  
Ecole Nationale Supérieure de Chimie de Rennes, Univ Rennes (France)

For some years, our group has specialized in the synthesis of 1,1,4,4-tetracyanobutadienes (TCBD) resulting from the reaction between an ynamide and tetracyanoethylene (TCNE).<sup>1</sup> This reaction is constituted by two steps: first a [2+2]cycloaddition allowing for the formation of an intermediate cyclobutene, then a [2+2]retroelectrocyclisation of this cyclobutene to lead to the corresponding TCBD (scheme 1), which is considered as a super electron acceptor. This sequence generally offers good yields and is tolerant to many functional groups. This reaction may also be initiated by other electron-rich alkynes.<sup>2</sup>



**Scheme 1.** Synthesis of a TCBD by reaction of an ynamide with TCNE.

We would like now to develop this reaction with  $\pi$ -extended R groups to study the fluorescence properties of the corresponding species as well as their non-linear absorption abilities. The possibility to use other electron-donating groups to activate the triple bond for the [2+2]cycloaddition-retroelectrocyclization will also be investigated.

To carry out this project, we are looking for a postdoctoral research fellow starting between January and May 2019. This project is funded for two years. **The funding agency requires that the candidate has spent at least 18 months out of France these last 3 years**, whatever his/her nationality.

**Profile of the candidate:** we are looking for a motivated and talented **organic chemist**. No particular knowledge in fluorescence and/or non-linear absorption is required.

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**End of the applications: 30 November 2018**

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<sup>2</sup> a) T. Shoji, S. Ito, *Chem. Eur. J.* **2017**, *23*, 16696 – 16709; b) T. Michinobu, F. Diederich, *Angew. Chem. Int. Ed.* **2018**, *57*, 3552 – 3577