FUNCMETAL - Metallodendrimers Cores Based on Functionalized Derivatives of 2,4,6-tri-substituted-1 ,3,5-triazine

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Scientific Responsible:
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Caracterization:

With this project we are synthesizing a new series of organometallic dendrimers from generation 0 to 2, based on derivatives of 2,4,6-trisubstituida-1 ,3,5-triazine with fragments of organometallic platinum etenilruténio and inserted in the main chain with a view to their possible use as nonlinear optical materials. The dendrimers with terminal groups are functionalized acetylide fragments complexes: M (PP) 2Cl (M = Ru; PP = dmpe (1,2-bis (ethane dimetilfosfino), M = Pt, PP = PEt3) etenilferrocenil ruthenium (II) or platinum (II), known good electron donors. In preparation of this family of dendrimers will apply a combination of synthesis strategy for engagement with the method of divergent synthesis of dendrimers.

The characterization of the new family of compounds will be done using chromatographic and spectroscopic techniques chains. The redox behavior of metal centers in dendrimers is studied by cyclic voltammetry and coulometry.

Objectives:

- Reaching new synthetic forms for the preparation of new Metallodendrimers and to tune their physical and chemical properties;
- It is intended that the use of a core receiver better than the 1,3,5-benzene could enhance the first hyperpolarizability;
- It is expected that, using the extension of the pi-polarizable, that the beta values are greater than for the 1,3,5-triazine octupolar system simpler;

- We anticipate that inclusion of organometallic fragments in the main chain (etenilruténio and platinum) and dendrimers (fragments etenilferrocenil ruthenium (II) or platinum (II)) may contribute to an increase in charge transfer octupolar and global, and consequently, to enhancement of nonlinear optical properties.