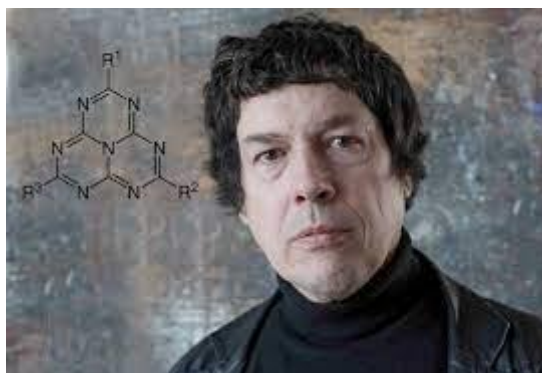


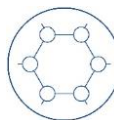
<i>Godzina</i>	<i>Prelegent</i>
13:00 – 13:05	<b>dr hab. inż. Przemysław Data, prof. PŚ</b> <i>Rozpoczęcie e-konferencji POB3: Materiały przyszłości. Wprowadzenie</i>
	<b>Nowe osiągnięcia w chemii tetrazyn i heptazyn; Ulepszenia syntetyczne i oryginalne właściwości we fluorescencji i fotokatalizie.</b> <b>New Developments in Tetrazines and Heptazines Chemistry; Synthetic Improvements and Original Properties in Fluorescence and Photocatalysis.</b>
13:05 – 13:45	<b>Prof. Pierre Audebert</b> <i>École Normale Supérieure Paris-Saclay (France)</i>
13:45 – 14:00	<b>Dyskusja Q&amp;A</b> <b>Zakończenie e-konferencji.</b> <i>Moderator: Dr hab. inż. Przemysław Data, prof. PŚ</i>

### Professor Pierre Audebert



Pierre Audebert is a professor at ENS Paris-Saclay and researcher in the laboratory of supramolecular and macromolecular photophysics and photochemistry (PPSM - Université Paris-Saclay, ENS Paris-Saclay, CNRS) and the XLIM research institute (CNRS, University of Limoges).

After his PhD thesis on functionalized polypyrrole, he joined Prof. Savéant and Prof. Andrieux's group as a CNRS researcher to work on new modified electrodes. He was then appointed professor at the University of Franche Comté and then joined ENS Paris-Saclay as a professor, where he has been leading a research team for 15 years. He is a member of the Supramolecular and Macromolecular Photophysics and



***POB3: Materiały Przyszłości***

Photochemistry Laboratory (PPSM - Université Paris-Saclay, ENS Paris-Saclay, CNRS) and the XLIM Research Institute (CNRS, University of Limoges).

His research activities focus on molecules from the tetrazine family, which he studies in particular from the aspect of fluorescence, as well as the interaction between electrochemistry and fluorescence (electrofluorochromism). He turned to heptazines, other exciting heterocycles very loaded with nitrogen, with the invaluable help of his collaborators Clémence Allain and Laurent Galmiche.

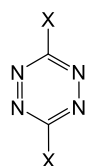
## **New Developments in Tetrazines and Heptazines Chemistry; Synthetic Improvements and Original Properties in Fluorescence and Photocatalysis**

Pierre Audebert

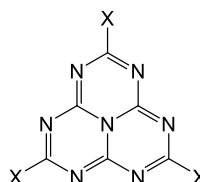
École Normale Supérieure Paris-Saclay, Paris, France

XLIM Research Institute, Limoges, France

s-Tetrazines, and the far more enigmatic heptazines, which count much less described examples until very recently, are among the most electron deficient high-nitrogen content, stable aromatic heterocycles (Fig. 1, top). This peculiarity confers them very original physico-chemical characteristics, including delayed fluorescence (Fig. 1, bottom), a high electrochemical reduction potential, among others.



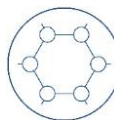
s-tetrazines



heptazines



This lecture will present new synthetic advances in the field of tetrazines (1-2), and heptazines (3-4). Along the same track, the fluorescence, electrofluorochromism and 2-PA of several tetrazine families, will be presented, as well as new low-viscosity fluorescent liquids. The original delayed fluorescence of heptazines, will be introduced, along with first results in photocatalysis.



**POB3: Materiały Przyszłości**

## References

- [1] Y. Kim, E. Kim, G. Clavier and P. Audebert, *Chem. Commun.*, **2006**, 3612.
- [2] G. Clavier and P. Audebert "s-Tetrazines as building blocks for new functional molecules and molecular materials", *Chem. Rev.*, **2010**, 110, 3299.
- [3] L. Galmiche, T. Le, C. Allain and P. Audebert, patent filed, **2018**. P. Audebert, L. Galmiche, C. Allain, R. Guillot, T. Le, *Chem. Sci.*, **2019**, 10, 5513.
- [4] P. Audebert, E. Kroke, C. Posern and S. H. Lee, State of the Art in the Preparation and Properties of Molecular Monomeric s-Heptazines: Syntheses, Characteristics, and Functional Applications. *Chemical Reviews* **2021**, 121, 2515-2544.