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ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ О ВОЗМОЖНОСТИ ОПУБЛИКОВАНИЯ

Руководитель-эксперт Федерального государственного бюджетного учреждения науки Института элементоорганических соединений им. А.Н.Несмеянова Российской академии наук, рассмотрев *статью* авторов A.A. Astafiev, O.V. Repina, B.S.Tupertsev, A.A. Nazarov, M.R. Gonchar, A.V. Vologzhanina, V.G. Nenajdenko, A.S. Kritchenkov, V.V.Khrustalev, V.N. Nadtochenko, A.G. Tshkhovrebov «**Unprecedented Coordination-Induced Bright Red Emission from Group 12 Metal-Bound Triarylazoimidazoles**», подготовленную для печати в журнале Molecules, подтверждает, что в материале *не содержатся* сведения, предусмотренные Постановлением Правительства РФ №1233 от 30.11.1994г. и на публикацию материала *не следует* получать разрешение *Минобрнауки и/или Президиума РАН*

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Unprecedented Coordination-Induced Bright Red Emission from Group 12 Metal-Bound Triarylazoimidazoles

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Abstract: Arylazoimidazoles are important dyes which were intensively studied in the past. In contrast, triarylazoimidazoles (derivatives which carry aryl substituents at the imidazole core) received almost no attention in the scientific literature. Here, we report a new family of simple and easily accessible triarylazoimidazole-group 12 metal complexes, which feature highly efficient photo-luminescence emission (Φ up to 0.44). Novel compounds exhibit bright red emission in solution, which could be excited with a visible light.

Keywords: azo dyes; nitrogen heterocycles; fluorescence; group 12 metal complexes

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1. Introduction

Emissive metal complexes are the key components or rapidly developing critical technologies, including organic light-emitting diodes (OLED) [1,2] photovoltaics [3,4] sensing [5,6] bioimaging [7] photodynamic therapy [8], and photocatalysis [9,10]. The progress in these areas significantly depends on the improvement of physical characteristics and their fine tuning via chemical manipulations with metal complexes' structures [11]. Their fundamental importance and applicability stimulate active search for the new families of emissive metal complexes.

In this context, azoimidazoles are attractive chelating ligands with easily tunable electronic and photophysical properties via facile structural modifications [12–17]. Recently, we described a novel method for the synthesis of this important class of dyes, which employs nitrous oxide as a donor of azo group [17–19].

From the photophysics research perspective, azoimidazoles, being representatives of classical molecular switches, were comprehensively studied due to their important photochromic properties [20,21]. They are believed to be promising for applications in photopharmacology and bioinorganic chemistry since imidazole moiety is an essential group in biology, often serving as a supporting ligand in metal-containing systems [20,21]. In general, photoswitchable late transition metal complexes hold promise for the development of novel methods which would feature advantageous control of drug-action

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Sample Availability: Samples of the compounds **3–10** are available from the authors.

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