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# Dr. Mikhail A. Filatov

## Personal information

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**Nationality** Russian



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## Professional Experience:

2010 - 2014: Postdoctoral fellow  
Max Planck Institute for Polymer Research, Mainz, Germany

2009: Postdoctoral fellow  
Institut de chimie Moléculaire de l'Université de Bourgogne, Dijon,  
France

## Education:

2005 – 2008: Ph.D. in Chemistry, Moscow State University, Moscow, Russia

2000 – 2005: M.S. in Chemistry, Moscow State University, Moscow, Russia

## Research Interests and Experience:

Photoactive nanoparticles, photon up-conversion, excited state energy transfers in organic molecular systems, modeling of photosynthetic modules, fluorescent dyes, multistep organic synthesis, porphyrin chemistry, cross-coupling reactions, microemulsions, synthesis of natural phytohormones, scaling-up of organic synthesis.

## Publications

### Patents

4. Katharina Landfester, Mikhail Filatov, Yuri Avlasevich, Dzmitry Busko, Stanislav Balouchev, Andrei Turshatov, Frederik Wurm, Filippo Marsico. Long-term stable composition, such as phosphorescent composition or TTA-photon upconversion composition. *World Patent Application 13185751.8-1355*, **2013**.
3. M.A. Filatov, A.V. Cheprakov, A.Y. Lebedev, S.A. Vinogradov. Method of Synthesis of 5,5'-Disubstituted  $\pi$ -extended Dipyromethenes and Their Use as Analytical Reagents for Metal Ions and Fluorescent Imaging Probes. // **2009**, *Patent US 12/902,401*.
2. A.V. Cheprakov, M.A. Filatov. Method of Reduction of Unsaturated Ketones into Saturated Ketones. // *Patent RU 2 293 720 C1*, **2007**.
1. A.V. Cheprakov, M.A. Filatov, N.V. Lukashev, N. N. Malevannaya. Method of Synthesis of 24-Epibrassinolide. // *Patent RU 2 272 044 C1*, **2006**.

### Papers

17. C. Wohnhaas, V. Mailänder, M. Dröge, M. Filatov, D. Busko, Y. Avlasevich, Stanislav Balushev, T. Miteva, K. Landfester, A. Turshatov. Fabrication of low-power upconverting nanocapsules for bioimaging in red and far-red spectral regions. // *Macromolecular*

*Bioscience*, **2013**, 13, 1422–1430.

16. M.A. Filatov, S. Balushev, I.Z. Ilieva, V. Enkelmann, T. Miteva, K. Landfester, S. Aleshchenkov, A.V. Cheprakov. Tetraanthraporphyrins: synthesis, structure and optical properties. // *J. Org. Chem.*, **2012**, 77, 11119–11131.

15. P.D. Harvey, A. Langlois, M. Filatov, D. Fortin, K. Ohkubo, S. Fukuzumi, R. Guilard. Decoupling the Artificial Special Pair to Slow Down the Rate of Singlet Energy Transfer. // *J. Porphyrins Phthalocyanines*, **2012**, 16, 8-10.

14. E.R. Ranyuk, M.A. Filatov, A.D. Averin, A.V. Cheprakov, I.P. Beletskaya. The Synthesis of Highly Basic  $\pi$ -Extended Porphyrins by Palladium Catalyzed Amination. // *Synthesis*, **2012**, 3, 393-398.

13. S. Thyagarajan, B. Ghosh, M.A. Filatov, A.V. Moore, A.V. Cheprakov, S.A. Vinogradov. Near infrared dipyrin-based fluorogenic chelators for metal ions. // *Proc. SPIE*, **2011**, 7910, 79100Z.

12. P.D. Harvey, M.A. Filatov, R. Guilard. Bis- and Trisporphyrin Bio-Inspired Models for Bacterial Antennas and Photosystems. // *J. Porphyrins Phthalocyanines*, **2011**, 15, 1-22.

11. M.A. Filatov and A. V. Cheprakov. The Synthesis of New Tetrabenzo- and Tetranaphthoporphyrins via the Addition Reactions of 4,7-Dihydroisindole. // *Tetrahedron*, **2011**, 3559-3566.

10. M.A. Filatov, F. Laquai, D. Fortin, R. Guilard, P.D. Harvey. Strong Donor–Acceptor Couplings in a Special Pair-Antenna Model. // *Chem. Comm.*, **2010**, 46, 9176-9178.

9. M.A. Filatov, A. Y. Lebedev, S.N. Mukhin, S. A. Vinogradov and A. V. Cheprakov.  $\pi$ -Extended Dipyrins Capable of Highly Fluorogenic Complexation with Metal Ions. // *J. Am. Chem. Soc.*, **2010**, 132, 9552-9554.

8. M.A. Filatov, R. Guilard, P. Harvey. Selective Stepwise Suzuki Cross-coupling Reaction for the Modelling of Photosynthetic Donor–Acceptor Systems. // *Org. Lett.*, **2010**, 12, 196-199.

7. M.A. Filatov, S.E. Aleshchenkov, A.V. Cheprakov. A Versatile General Approach to the Synthesis of Linearly Annelated  $\pi$ -Extended Porphyrins via 4,7-Dihydroisindole Derivatives. // *Macroheterocycles*, **2009**, 2, 198-205.

6. A.V. Cheprakov, M.A. Filatov. The Dihydroisindole Approach to  $\pi$ -Extended Porphyrins. // *J. Porphyrins and Phthalocyanines*, **2009**, 13, 291-303.

5. A.Y. Lebedev, M.A. Filatov, A.V. Cheprakov, S.A. Vinogradov. Effects of Structural Deformations on Optical Properties of Tetrabenzoporphyrins: Free-bases and Pd Complexes. // *J. Phys. Chem. A.*, **2008**, 112, 7723-7733.

4. M.A. Filatov, A.Y. Lebedev, S.A. Vinogradov, A.V. Cheprakov. Synthesis of 5,15-Diaryltetrabenzoporphyrins. // *J. Org. Chem.*, **2008**, 73, 4175-4185.

3. M.A. Filatov, A.V. Cheprakov, I.P. Beletskaya. A Facile and Reliable Method for the Synthesis of Tetrabenzoporphyrins from 4,7-Dihydroisindole. // *Eur. J. Org. Chem.*, **2007**, 3468-3475.

2. A.V. Cheprakov, M. A. Filatov, N.V. Lukashev, I.P. Beletskaya, N.N. Malevannaya. Improved Synthesis of Epibrassinolide and its Application in Agriculture. // *Biotechnology, Agriculture and Food Industry*, Chapter 7, p. 41-45, Editor: G.E. Zaikov, Nova Science Publishers, Inc., New York, **2006**.

1. O.S. Finikova, A.V. Cheprakov, S.Y. Chernov, M.A. Filatov, S.A. Vinogradov, I.P. Beletskaya. Novel Synthesis of Substituted Tetraaryltetrabenzoporphyrins. // *Proc. Russ. Acad. of Sci. - Chemistry*, **2003**, 391, 222-224.