



Y. Morita

The author presented on this page has recently published his **10th article** in *Angewandte Chemie* in the last 10 years:

"A Synthetic Two-Spin Quantum Bit: g-Engineered Exchange-Coupled Biradical Designed for Controlled-NOT Gate Operations": S. Nakazawa, S. Nishida, T. Ise, T. Yoshino, N. Mori, R. D. Rahimi, K. Sato, Y. Morita, K. Toyota, D. Shiomi, M. Kitagawa, H. Hara, P. Carl, P. Höfer, T. Takui, *Angew. Chem.* **2012**, 124, 9998–10002; *Angew. Chem. Int. Ed.* **2012**, 51, 9860–9864.

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Position:	Associate Professor, Department of Chemistry, Osaka University (Japan)
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Education:	1983 Undergraduate degree in chemistry, Nagoya University 1989 PhD in chemistry with Prof. Ryoji Noyori, Nagoya University 1989–1990 Postdoctoral researcher with Prof. Stuart L. Schreiber, Harvard University
Awards:	2010 SSOCJ DIC Award for Functional Material Chemistry; 2011 Osaka University Achievement Award in Research; first prize in the Osaka Smart-Energy Business Competition; Nagase Science and Technology Foundation Award; 2012 Osaka University Presidential Award for Achievement
Current research interests:	Open-shell molecules, with a high air stability and extensive electronic-spin delocalization, based on polycyclic condensed π -conjugated systems; high-performance rechargeable batteries containing π -conjugated organic compounds; hydrogen-bonded charge-transfer complexes; photovoltaic cells and field-effect transistors; quantum computing
Hobbies:	Softball, walking

If I were not a scientist, I would be ... an archeologist.

The most important thing I learned from my parents is ... patience and modesty.

When I'm frustrated, I ... drink some tasty wine and sleep.

My top three films of all time are ... Batman (by Tim Burton), Godzilla, and The Marrying Man.

My favorite food is ... Japanese traditional baked fish with salt and white radishes.

The most significant scientific advance of the last 100 years has been ... the discovery and synthesis of β -lactam antibiotics.

What I look for first in a publication is ... a (supra)molecular structure with a unique functionality.

My favorite piece of research is ... the use of synthetic chemistry to create molecules with unconventional physical properties.

If I won the lottery, I would ... build my own research laboratory.

My favorite place on earth is ... my home.

I chose chemistry as a career because ... I have no talent for other sciences and sports.

My 5 top papers:

1. "Organic tailored batteries materials using stable open-shell molecules with degenerate frontier orbitals": Y. Morita, S. Nishida, T. Murata, M. Moriguchi, A. Ueda, M. Satoh, K. Arifuku, K. Sato, T. Takui, *Nature Mater.* **2011**, 10, 947–951. (The multistage redox ability of these compounds was utilized to produce high-capacity rechargeable batteries.)
2. "Spin Transfer and Solvato-/Thermochromism Induced by Intramolecular Electron Transfer in a Purely Organic Open-Shell System": S. Nishida, Y. Morita, K. Fukui, K. Sato, D. Shiomi, T. Takui, K. Nakasuji, *Angew. Chem.* **2005**, 117, 7443–7446; *Angew. Chem. Int. Ed.* **2005**, 44, 7277–7280. (A moderate change of solvent or temperature results in a spin transfer and color change by intramolecular electron transfer.)
3. "Thermochromism in an organic crystal based on the coexistence of σ - and π -dimers": Y. Morita, S. Suzuki, K. Fukui, S. Nakazawa, H. Kitagawa, H. Kishida, H. Okamoto, A. Naito, A. Sekine, Y. Ohashi, M. Shiro, K. Sasaki, D. Shiomi, K. Sato, T. Takui, K. Nakasuji, *Nature Mater.* **2008**, 7, 48–51. (The temperature-dependent continuous color change of a single crystal of a spin-delocalized neutral radical.)
4. "A Purely Organic Molecular Metal Based on a Hydrogen-Bonded Charge-Transfer Complex: Crystal Structure and Electronic Properties of TTF-Imidazole-*p*-Chloranil": T. Murata, Y. Morita, K. Fukui, K. Sato, D. Shiomi, T. Takui, M. Maesato, H. Yamochi, G. Saito, K. Nakasuji, *Angew. Chem.* **2004**, 6503–6506; *Angew. Chem. Int. Ed.* **2004**, 43, 6343–6346. (The first report of a purely organic hydrogen-bonded charge-transfer complex exhibiting metallic conduction.)
5. "Synthetic organic spin chemistry for structurally well-defined open-shell graphene fragments": Y. Morita, S. Suzuki, K. Sato, T. Takui, *Nature Chem.* **2011**, 3, 197–204. (A summary of our two-decade contribution to spin chemistry based on the phenalenyl system and molecular design criteria for future targets.)

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