Chemistry is about creating objects and new things.
– J. Fraser Stoddart

- STEVE JOBS

Metal-ligand misfits

h-index = 47; #3 in Norway
Nature Index 1995-2015: #1 in Norway
Amphiphilic gold corroles: Phototoxicity against AY27 rat bladder cancer cells with blue light

Dye-sensitized solar cells

![Diagram of Dye-sensitized solar cells](image)

<table>
<thead>
<tr>
<th>Dye</th>
<th>$V_{oc}$ (V)</th>
<th>$I_{sc}$ (mA/cm$^2$)</th>
<th>Fill Factor</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>N719</td>
<td>-0.83</td>
<td>22.3</td>
<td>0.57</td>
<td>10.5%</td>
</tr>
<tr>
<td>$H_2[pTCPP]$</td>
<td>-0.53</td>
<td>6.4</td>
<td>0.72</td>
<td>2.5%</td>
</tr>
<tr>
<td>$H_3[mTCPC]$</td>
<td>-0.43</td>
<td>0.27</td>
<td>0.72</td>
<td>0.08%</td>
</tr>
<tr>
<td>$H_3[pTCPC]$</td>
<td>-0.45</td>
<td>0.42</td>
<td>0.73</td>
<td>0.14%</td>
</tr>
<tr>
<td>Au[mTCPC]</td>
<td>-0.56</td>
<td>8.7</td>
<td>0.72</td>
<td>3.5%</td>
</tr>
<tr>
<td>Au[pTCPC]</td>
<td>-0.46</td>
<td>0.48</td>
<td>0.75</td>
<td>0.17%</td>
</tr>
</tbody>
</table>
New, general coordination chemistry

{Ru(COD)Cl₂}ₙ
NaNO₂

Os₃(CO)₁₂
NaN₃, Δ

Re₂(CO)₁₀, Δ

(NEt₄)₂[⁹⁹TcCl₃(CO)₃]
RT near-IR phosphorescence: Oxygen sensing

![Graphs showing phosphorescence decay time (τ, µs) and normalized intensity (I/I₀) as a function of pO₂ (kPa) at different temperatures (5°C, 25°C, 45°C).](image)

Au[(CF$_3$)$_8$TpFPC]: Ligand noninnocence
Experimental probes of ligand noninnocence

Coordination Chemistry | Hot Paper |

Ligand Noninnocence in Coinage Metal Corroles: A Silver Knife-Edge

Christine M. Beavers,[c] Karl M. Kadish,[c] and Abhik Ghosh*[a]

Dedicated to Professor Harry B. Gray on the occasion of his 80th birthday
Ag L₃ XAS

Use fourth-generation light sources!

Tungsten biscoorroles

A new inherently chiral chromophore:
No stereogenic center!
Superheavy elements: Does the island of stability exist?

Superheavy Compounds

The Valence States of Copernicium and Flerovium

Abhik Ghosh[a] and Jeanet Conradie[b]

Abstract: Compared with its lighter congener HgF₂, copernicium tetrafluoride, CfF₄, is predicted to be significantly more stable with respect to decomposition to the elements. Tetravalent flerovium on the other hand is unlikely to be experimentally accessible, except possibly as FIF₄. Because of the large 7P₁/₂-3/₂ energy splitting, many divalent flerovium compounds are also expected to be thermodynamically unstable. The two dihalides FIF₂ and PIF₄, however, are predicted to be thermodynamically stable; flerovium thus is not quite as noble as xenon, which is not known to form a chloride.
Torgil Vangberg
1.amanuensis
UiT/UNN

Hege Ryeng
Kongsbakken
vgs.

Clockwise from top:
Espen Tangen, UiT, IT division
Inge Johansen, Photocure AS, regulatory manager
Ingar Wasbotten, Akvaplan Niva, senior researcher
Erik Steene, Biotec Pharmacon, QC manager

Steffen Berg
Arendal vgs.