Supplementary Material (ESI) for Chemical Communication

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Intramolecular Heterocyclization Assisted Oxidative Addition:

Synthesis of Octahedral Cycloplatinated (IV) Methyl Complexes

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Table of contents

General Techniques 2
General procedure preparation of N-aryl perfluoroalkyl
Propargyl imines ligands (1a, 1b, 1c, 1d) 3-5
General procedure for the preparation of platinacycles (2a, 2b, 2c, 2d) 6-9
In-situ ESI-MS Study 10-11
UV-Vis data of ligands (1a, 1b, 1c, 1d) 11-12
Spectroelectrochemistry of 2b 12
Differential Pulse Voltametry of ligands (1a, 1b, 1c, 1d) and Complexes (2a, 2b, 2c, 2d) 13
Electrochemical data of ligands (1a, 1b, 1c, 1d) and Complexes (2a, 2b, 2c, 2d) 14
Cyclic Voltametry of ligand 1a and Complex 2a 15
Reaction of Platinacycles 16-17
1H NMR, 13C NMR and ESI-MS 18-44
General Techniques:

All reactions were carried out in oven dried glassware under an atmosphere of nitrogen. Chemicals were purchased from Aldrich and used as it is unless mentioned otherwise. All the solvents used for the reaction were dried before use. The product purification by column chromatography was accomplished using silica gel 60-120 mesh. The technical grade solvents were used for chromatography and distilled prior to use. NMR spectra were recorded in Fourier transform mode. The $^1$H NMR and $^{13}$C NMR spectra were recorded on a Bruker-Avance (300 MHz); Inova (400 MHz) and Avance (500 MHz) spectrophotometer using CDCl$_3$ and TMS as the internal standard. Multiplicities in the $^1$H NMR spectra are described as: s = singlet, d = doublet, t = triplet, q = quartet, qt = quintet, m = multiplet, bs = broad singlet; coupling constants are reported in Hz. Low (MS) and high (HRMS) resolution mass spectra were recorded on a Waters 2695 and Thermo Scientific Exactive spectrometer respectively and mass/charge (m/z) ratios are reported as values in atomic mass units. All the melting point is uncorrected. Electrochemical measurements were performed on a PC-controlled CH instruments model CHI 620C electrochemical analyzer. The optical thin layer electrochemical studies were carried on Maya 2000 Ocean Optics software using DT-MINI-2-GS, UV-VIS-NIR LIGHTSOURCE. Steady-state fluorescence spectra were recorded using a Fluorolog-3 spectrofluorometer (Spex model, Jobin Yvon) for solutions with optical density at the wavelength of excitation ($\lambda_{ex}$) $\approx$0.05 Electrochemical measurements were performed on a PC-controlled CH instruments model CHI 620C electrochemical analyzer. The optical thin layer electrochemical studies were carried on Maya 2000 Ocean Optics software using DT-MINI-2-GS, UV-VIS-NIR
LIGHTSOURCE. Steady-state fluorescence spectra were recorded using a Fluorolog-3 spectrofluorometer (Spex model, Jobin Yvon) for solutions with optical density at the wavelength of excitation ($\lambda_{ex}$) $\approx 0.05$

**General procedure for the preparation of N-aryl perfluoroalkyl propargyl imines. (1a, 1b, 1c, 1d):**

![Scheme 1](image)

**Scheme 1:**
To a stirred mixture of PdCl$_2$(PPh$_3$)$_2$ (2mol%) and CuI (4mol%) in Et$_3$N (4mL), 2-(methylthio/methylseleno)phenylacetylene(1 mmol) and $N$-aryl trifluoromethylimidoyl iodide(1mmol) were added successively under N$_2$ atmosphere. The mixture was stirred at room temperature until the starting materials were consumed. The reaction mixture was then filtered and from the filtrate the solvent was evaporated under reduced pressure. The crude product obtained was purified by column chromatography using hexane/EtOAc(90:10) mixture.
Ligand data:

(4-Methoxy-phenyl)-[3-(2-methylthio-phenyl)-1-trifluoromethyl-prop-2-ynylidene]-amine (1a):
Yield: 88% (307 mg), Yellow liquid, $^1$H NMR (500 MHz, CDCl$_3$): 7.66 (m, 2H), 7.46-7.34 (m, 2H), 7.22-7.08 (m, 1H), 7.12 (m, 1H), 6.98-6.92 (dd, $J = 2.07$ Hz and 6.98 Hz, 2H), 3.86 (s, 3H), 2.50 (s, 3H). $^{13}$C -NMR (125 MHz CDCl$_3$): 159.9, 143.8, 140.2, 133.9, 131.0, 125.2, 124.8, 124.5, 122.2, 118.6, 114.4, 113.9, 97.7, 85.9, 55.1, 15.3; IR (Neat): v(cm$^{-1}$): 2930, 2841, 2198, 1612, 1252, 1161, 1138, 1095, 836, 756, 578; ESI-MS:m/z = 350 [M + H]$^+$. 

(4-Methoxy-phenyl)-[3-(2-methylthio-phenyl)-1-nonafluorobutyl-prop-2-ynylidene]-amine (1b):
Yield: 84% (394 mg), Yellow liquid, $^1$H-NMR (500 MHz, CDCl$_3$): $\delta$ 7.67 (dd, $J = 2.136$ and 6.866 Hz 2H), 7.39 (m, 2H), 7.19 (m, 1H), 7.11 (m, 1H), 6.95 (m, 2H), 3.85 (s, 3H), 2.48 (s, 3H) $^{13}$C -NMR (125 MHz CDCl$_3$): 150.5, 144.0, 141.6, 141.2, 140.9, 137.7, 133.9, 133.4, 131.0, 129.5, 127.9, 124.3, 124.2, 120.3, 118.0, 111.8, 97.9, 85.5, 55.6,
14.7; IR (Neat): \( \nu (\text{cm}^{-1}): 2925, 2841, 2190, 1610, 1573, 1503, 1463, 1353, 1300, 1234, 1135, 1091, 751; \) ESI-MS: m/z = 522 [M + Na]^+.

(4-Methoxy-phenyl)-[3-(2-methylseleno-phenyl)-1-trifluoromethyl-prop-2-ynylidene]-amine(1c)

The product was obtained as a yellowish oil; \(^1\)H NMR (500 MHz, CDCl\(_3\)) \( \delta 7.65 \) (m, 2H), 7.35 - 7.45 (m, 2H), 7.10 - 7.25 (m, 2H), 6.95 (m, 2H), 3.85 (s, 3H), 2.5 (s, 3H); \(^{13}\)C NMR (125 MHz, CDCl\(_3\)) \( \delta 159.9, 143.8, 140.2, 133.9, 131.9, 131.0, 125.2, 124.6, 124.9, 118.5, 113.9, 97.7, 85.9, 55.5, 15.2; \) IR (Neat): \( \nu (\text{cm}^{-1}): 2930, 2845, 2198, 1612, 1584, 1490, 1462, 1331, 1165, 985, 758; \) ESI-MS: m/z = 398 [M + H]^+.

(4-Methoxy-phenyl)-[3-(2-methylseleno-phenyl)-1-pentafluoroethyl-prop-2-ynylidene]-amine(1d)

The product was obtained as a yellowish oil; \(^1\)H NMR (500 MHz, CDCl\(_3\)) \( \delta 7.65 \) (m, 2H), 7.35 - 7.45 (m, 2H), 7.10 - 7.25 (m, 2H), 6.95 (m, 2H), 3.85 (s, 3H), 2.5 (s, 3H); \(^{13}\)C NMR
(125 MHz, CDCl$_3$) $\delta$ 160.0, 143.8, 140.2, 135.4, 133.8, 131.0, 125.2, 124.5, 124.4, 118.6, 113.9, 97.9, 86.2, 55.3, 14.9; IR (Neat): $\nu$(cm$^{-1}$) 2926, 2839, 2195, 1584, 1461, 1434, 1254, 1204, 1161, 1097, 1026, 965, 749; ESI-MS:m/z = 449[M + H]$^+$. 

2. General procedure for the preparation of platinacylces (2a, 2b, 2c, 2d):

To a solution of PtCl$_2$ (67 mg, 0.25 mol) in dry toluene (5 mL) at 0° C, ligand 1(0.25 mol) was added. The mixture was stirred for overnight at room temperature. On the completion of reaction (monitored by TLC), the mixture was concentrated to half volume. The addition of n-hexane to mixture affords dark reddish colour precipitation. The mixture was filtered and residue was washed with diethyl ether (10 mL). The crude product was subjected to column chromatography and purified using hexane/EtOAc (80:20) mixture.
Synthesis of 2a:

The product was obtained as a reddish solid, $^1$H NMR (500 MHz, CDCl$_3$) $\delta$ 8.49 (d, $J = 8.3$ Hz, 1H), 8.0 (d, $J = 8.1$ Hz, 1H), 7.85 (d, $J = 8.1$ Hz, 1H), 7.57 (t, $J = 7.3$ Hz, 1H), 7.42 (t, $J = 7.4$ Hz, 1H), 7.36 (t, $J = 7.3$ Hz, 1H), 7.08 (m, 2H), 6.97 (dd, $J = 2.6$ and 8.7 Hz, 1H), 6.83-6.91 (m, 3H), 6.64 (m, 1H), 6.20 (d, $J = 8.2$ Hz, 1H), 6.06 (d, $J = 8.5$ Hz, 1H), 5.50 (m, 1H), 3.85 (s, 3H), 3.80 (s, 3H), 2.03 (s with satellites, $J (\text{Pt-CH}_3) = 33.7$ Hz, 3H); $^{13}$C NMR (125 MHz, CDCl$_3$) $\delta$ 159.1, 158.9, 153.1, 147.2, 138.2, 136.1, 128.6, 127.9, 127.3, 125.4, 125.4, 125.3, 124.5, 123.9, 123.0, 122.6, 121.8, 114.3, 113.6, 112.7, 55.7, 55.3, 31.5, 30.9, 29.7, 29.0, 22.6, 14.1, 14.1, -7.0; IR (Neat) $\nu$ (cm$^{-1}$): 3064, 2997, 2923, 2834, 1603, 1578, 1501, 1445, 1413, 1327, 1294, 1243, 1182, 1028, 992, 840, 760, 729, 625, 584, 524, 499, 405; Elemental analysis Calculated for C$_{35}$H$_{25}$ClF$_6$N$_2$O$_2$PtS$_2$: C, 45.98; H, 2.76; N, 3.06; S, 7.01. Found C, 46.00; H, 2.73; N 2.97; S, 6.94.

Synthesis of 2b:
The compound 2b was isolated by column chromatographic technique repeatedly however all the attempts were failed to purify the compound.

The product was obtained as a reddish solid, $^1$H- NMR (500 MHz, CDCl$_3$): $\delta$ 9.60 (d, $J$ = 8.5 Hz, 1H), 7.97 (d, $J$ = 8.2 Hz, 1H), 7.84 (d, $J$ = 8.1 Hz, 1H), 7.76(m, 1H), 7.64 (t, $J$ = 7.1 Hz, 1H), 7.48 (m, 1H), 7.36 (m, 2H), 6.99 (dd, $J$ = 2.7 and 8.7 Hz, 1H), 6.93 (m, 1H), 6.88 (m, 1H), 6.80 (dd, $J$ = 2.7 and 8.7 Hz, 1H), 6.61 (dd, $J$ = 2.7 and 8.8 Hz, 1H), 6.08 (m, 2H), 5.31 (d, $J$ = 9.3 Hz, 1H), 3.89 (s, 3H), 3.81 (s, 3H), 2.18 (m, 3H); $^{13}$C- NMR (125 MHz, CDCl$_3$) $\delta$: 207.0, 158.8, 128.7, 128.2, 127.4, 127.3, 125.2, 125.1, 124.4, 123.6, 122.8, 122.3, 121.2, 114.1, 112.9, 112.7, 112.2, 112.1, 55.7, 55.2, 30.9, 29.6, -6.1; IR (Neat): $\nu$(cm$^{-1}$) 3447, 3050, 2958, 2839, 1605, 1564, 1525, 1438, 1408, 1348, 1298, 1240, 1201, 1165, 1134, 1030, 989, 851, 815, 739, 633, 554, 527, 495; Elemental analysis Calculated for C$_{41}$H$_{25}$Cl$_8$N$_2$O$_2$Pt$_2$S$_2$ (2b): C, 4.52; H, 2.08; N, 2.31; S, 5.27. Found C, 40.52; H 2.06; N 2.30; S, 5.16.

**Synthesis of 2c:**

The product was obtained as a reddish solid, $^1$H NMR (500 MHz, CDCl$_3$) $\delta$ 8.51 (d, $J$ = 8.4 Hz, 1H), 7.96 (d, $J$ = 8.2 Hz, 1H), 7.81 (d, $J$ = 8.1 Hz, 1H), 7.52(t, $J$ = 7.5 and 7.6 Hz, 1H), 7.39 (t, $J$ = 7.3 and 8.1 Hz, 1H), 7.31(m, 2H), 7.13 (m, 1H), 7.05 (d, $J$ = 8.1 Hz, 1H),
6.91 (t, \( J = 7.3 \) and 8.1 Hz, 2H), 6.83 (t, \( J = 7.5 \) and 7.6 Hz, 1H ), 6.59 (m, 1H), 6.14 (d, \( J = 8.4 \) Hz, 1H), 5.93 (m, 1H), 4.79 (m, 1H), 3.83 (s, 3H), 3.61 (s, 3H), 2.20 (s with satellites, \( J (Pt-CH_3) = 34.7 \) Hz, 3H); \(^{13}\text{C NMR} \) (125 MHz, CDCl\(_3\)) \( \delta \) 158.5, 128.7, 128.2, 127.3, 125.3, 125.1, 124.4, 123.6, 122.8, 122.4, 121.2, 114.1, 112.9, 112.3, 112.1, 55.7, 55.2, 29.7, -6.1; IR (Neat) \( \nu(\text{cm}^{-1}) \): 3449, 2961, 2835, 1600, 1580, 1549, 1499, 1444, 1416, 1337, 1298, 1250, 1169, 1106, 982, 840, 781, 761, 718, 651, 576, 525;

Elemental analysis Calculated for C\(_{35}\)H\(_{25}\)ClF\(_6\)N\(_2\)O\(_2\)PtSe\(_2\): C, 41.70; H, 2.50; N, 2.78.
Found C, 41.66; H, 2.48; N, 2.77.

**Synthesis of 2d :**

The product was obtained as a reddish solid, \(^1\text{H NMR} \) (500 MHz, CDCl\(_3\)) \( \delta \) 8.39 (d, \( J = 8.4 \) Hz, 1H), 7.91 (d, \( J = 8.2 \) Hz, 1H), 7.77 (d, \( J = 8.1 \) Hz, 1H), 7.49 (t, \( J = 8.1 \) Hz, 1H), 7.31 (m, 2H), 6.97 (m, 3H), 6.84 (t, \( J = 7.3 \)Hz, 1H), 6.77 (m, 2H), 6.55 (dd, \( J = 2.9 \) and 8.8 Hz, 1H), 6.01 (d, \( J = 8.4 \) Hz, 1H), 5.85 (d, \( J = 8.7 \) Hz, 1H), 5.22(d, \( J = 8.7 \) Hz, 1H), 3.80 (s, 3H), 3.73 (s, 3H), 1.97 (s with satellites, \( J (Pt-CH_3)= 33.7 \) Hz, 3H); \(^{13}\text{C NMR} \) (125 MHz, CDCl\(_3\)) \( \delta \) 207.0, 158.8, 158.5, 147.6, 144.9, 139.0, 138.1, 136.3, 128.7, 128.1, 127.3, 125.2, 125.1, 124.4, 123.6, 122.3, 121.3, 121.2, 114.0, 112.9, 112.7, 112.2, 112.0, 55.7, 55.2, 30.9, 29.7, 22.6, -6.2; IR (Neat) \( \nu(\text{cm}^{-1}) \) 3423, 2957, 2836, 1603, 1547, 1502, 1448, 1333, 1304, 1253, 1180, 1143, 1032, 993, 839, 779, 755, 721, 657, 588, 534, 404;
Elemental analysis calculated for C$_{37}$H$_{25}$ClF$_{10}$N$_2$O$_2$PtSe$_2$: C, 40.77; H, 2.27; N, 2.52.

Found C, 40.77; H, 2.25; N, 2.52.

**In-situ ESI-MS Study**

![Graph a)](image1)

**Fig**: 1. **a)** Positive ion ESI mass spectrum recorded for the reaction mixture of propargyl imine 1a and platinum dichloride (12 h), **b)** Expanded spectrum of the sample showing the experimental isotopic pattern of the ion m/z 878, **c)** Simulated (theoretical) isotopic pattern for the formula C$_{35}$H$_{23}$F$_{6}$N$_2$O$_2$S$_2$Pt.
Table 1. HRMS data for Pt containing species detected for the reaction mixture of propargyl imine 1a and platinum dichloride (12 h).

<table>
<thead>
<tr>
<th>Ion (m/z)</th>
<th>Formula</th>
<th>Measured mass (m/z)</th>
<th>Exact mass (m/z)</th>
<th>Error (in ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>877</td>
<td>C$<em>{35}$H$</em>{25}$F$_6$N$_2$O$_2$S$_2$(194)Pt</td>
<td>877.0877</td>
<td>877.0888</td>
<td>-1.2</td>
</tr>
<tr>
<td>878</td>
<td>C$<em>{35}$H$</em>{25}$F$_6$N$_2$O$_2$S$_2$(195)Pt</td>
<td>878.0898</td>
<td>878.0912</td>
<td>-1.5</td>
</tr>
<tr>
<td>601</td>
<td>C$<em>{20}$H$</em>{18}$F$_3$N$_2$O$_2$S$_2$(194)Pt</td>
<td>601.0659</td>
<td>601.0668</td>
<td>-1.5</td>
</tr>
<tr>
<td>602</td>
<td>C$<em>{20}$H$</em>{18}$F$_3$N$_2$O$_2$S$_2$(195)Pt</td>
<td>602.0682</td>
<td>602.0691</td>
<td>-1.4</td>
</tr>
</tbody>
</table>

UV/Vis spectral changes in ligands 1a, 1b, 1c and 1d in CH$_2$Cl$_2$ Solution ($2.4 \times 10^{-4}$ M)
In situ UV-Visible absorption changes of Pt-complex 2b at an applied potential of -1.25V.

![Graph of absorption changes at -1.25V](image)

In situ UV-Visible absorption changes of Pt-complex 2b at an applied potential of +1.4V.

![Graph of absorption changes at +1.4V](image)
DPV for Ligands 1 and Complexes 2.
## Electrochemical Data

<table>
<thead>
<tr>
<th>Compounds</th>
<th>Oxi&lt;sub&gt;1&lt;/sub&gt;</th>
<th>Oxi&lt;sub&gt;2&lt;/sub&gt;</th>
<th>Red&lt;sub&gt;1&lt;/sub&gt;</th>
<th>Red&lt;sub&gt;2&lt;/sub&gt;</th>
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<tr>
<td>1a</td>
<td>1.68</td>
<td>1.28</td>
<td>-1.03</td>
<td>-1.47</td>
</tr>
<tr>
<td>1b</td>
<td>1.70</td>
<td>1.10</td>
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<td>-1.45</td>
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<tr>
<td>1c</td>
<td>1.68</td>
<td>1.02</td>
<td>-1.06</td>
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<tr>
<td>1d</td>
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<td>2b</td>
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</tr>
<tr>
<td>2c</td>
<td>1.75</td>
<td>1.38</td>
<td>-1.03</td>
<td>-1.52</td>
</tr>
<tr>
<td>2d</td>
<td>1.60</td>
<td>1.18</td>
<td>-1.07</td>
<td>-1.51</td>
</tr>
</tbody>
</table>
Cyclic Voltamogram of ligand 1a.

Cyclic Voltamogram of Complex 2a.
Insertion of diphenyl acetylene into platinum complex 2b:

![Chemical structure]

**Procedure:** - Diphenyl acetylene (89 mg, 0.5 mmol) was added into a solution of platinum complex 3b (47 mg, 0.05 mmol) in dry toluene (5 ml). Mixture was refluxed overnight (12 Hrs.). The solvent was removed under vaccum. The resulting solid was dissolved in DCM (10 ml). The black palladium formed was removed by filtration; solution was concentrated to small volume (up to 2 ml). Addition of diethyl ether (5 ml) caused precipitation of green colour solid, which was washed with additional diethyl ether. The product was obtained as a greenish solid, $^1$H -NMR (500 MHz, CDCl$_3$): $\delta$ 7.93 (m, 1H), 7.41(m, 1H), 7.23 (m, 6H), 7.05 (d, J = 8.87 Hz, 3H), 6.93 (m, 5H), 6.74 (d, J = 8.87, 2H), 6.63 (m, 1H), 3.72 (s, 3H)$^{13}$C -NMR (125 MHz, CDCl$_3$): 160.8, 154.6, 149.8, 145.4, 139.0, 137.8, 135.8, 133.5, 132.9, 131.5, 131.2, 131.5, 131.5, 130.8, 130.2, 129.2, 129.1, 129.0, 128.5, 127.5, 126.2, 122.6, 113.4, 55.5; ESI-MS:m/z = 662[M]$^+$
**Reaction of platinacycle 2a with triphenyl phosphine:**

![Chemical Structure](image)

**Procedure:** - Triphenyl phosphine (17.6 mg, 6.7 x 10^-5 Mol) was added to solution formed by (62.6 mg, 6.7x10^-5Mol) of Platinum complex 2a and 0.5 ml of CDCl₃. During the addition of triphenylphosphine, the colour of mixture changed from orange to bright yellow. The resulting solution was stirred for 2 hours in nitrogen atmosphere at room temperature. Solvent was allowed to evaporate. The pale yellow residue was then treated with 5 ml of n-hexane; solid was collected by filtration, washed with n-hexane and air-dried. ESI-MS of product shows removal of p-methoxy imidoyl chloride (C₉H₇ClF₃NO mol. Wt. 237). The product was obtained as a Yellowish solid, ¹H -NMR (500 MHz, CDCl₃): δ 7.98 (d, J = 7.93 Hz 1H), 7.71(dd, J = 5.64, 12.35 Hz 1H), 7.45 (m, 12H), 7.39 (m,2H), 7.29 (t, J = 7.32Hz  6H), 7.15 (m, 12H), 7.07 (m, 1H), 6.88(m, 2H), 6.80 (m, 1H), 6.58 (m, 2H), 3.90 (s, 3H)³C -NMR (125 MHz, CDCl₃): δ 179.6, 156.1, 143.7, 142.8, 140.9, 135.0, 134.2, 133.7, 133.6, 131.0, 130.8, 130.6, 130.4, 129.8, 129.7, 129.5, 129.3, 128.6, 128.5, 128.4, 128.0, 127.7, 125.6, 122.8, 121.0, 120.0, 117.6, 113.6, 96.0, 60.0, 55.6, 45.7, 8.6.

ESI-MS: m/z = 852 [M – 237]^+
$^1H$ NMR and $^{13}C$ NMR
$^1$H NMR of (4-Methoxy-phenyl)-[3-(2-methylthio-phenyl)-1-trifluoromethyl-prop-2-ynylidene]-amine (1a):
$^{13}$C NMR of (4-Methoxy-phenyl)-[3-(2-methylthio-phenyl)-1-trifluoromethyl-prop-2-ynylidene]-amine (1a):
$^1$H NMR of (4-Methoxy-phenyl)-[3-(2-methylthio-phenyl) - 1-nonafluorobutyl-prop-2-ynylidene]-amine (1b):
\[^{13}\text{C}\] NMR of (4-Methoxy-phenyl)-[3-(2-methylthio-phenyl) - 1-nonafluorobutyl-prop-2-nylidene]-amine (1b):
$^1$H NMR of (4-Methoxy-phenyl)-[3-(2-methylseleno-phenyl)-1-trifluoromethyl-prop-2-ynylidene]-amine (1c):
$^{13}$C NMR of (4-Methoxy-phenyl)-[3-(2-methylseleno-phenyl)-1-trifluoromethyl-prop-2-ynylidene]-amine (1c):
$^1$H NMR of (4-Methoxy-phenyl)-[3-(2-methylseleno-phenyl)-1-pentafluoroethyl-prop-2-ynylidene]-amine (1d):
$^{13}$C NMR of (4-Methoxy-phenyl)-[3-(2-methylseleno-phenyl)-1-pentafluoroethyl-prop-2-ynylidene]-amine (1d):
$^1$H NMR of platinum complex 2a

Ar = p-OMeC$_6$H$_4$
$^{13}$C NMR of platinum complex 2a

Ar = $p$-OMeC$_6$H$_4$
$^{1}$H NMR of platinum complex 2b

Ar = $p$-OMe$_6$H$_4$
$^{13}$C NMR of platinum complex 2b:

[Chemical structure image]

$\text{Ar} = \text{p-OMeC}_6\text{H}_4$
$^1$H NMR of platinum complex 2c

Ar = $p$-OMeC$_6$H$_4$
$^{13}$C NMR of platinum complex 2c

Ar = $p$-OMeC₆H₄
$^1$H NMR of platinum complex 2d

Ar = $p$-OMeC$_6$H$_4$
$^{13}$C NMR of platinum complex 2d

Ar = $p$-OMeC$_6$H$_4$
$^1$H NMR of Alkyne (diphenyl acetylene) insertion into Pt (IV) complex 2b
$^{13}$C NMR of Alkyne (diphenyl acetylene) insertion into Pt (IV) complex 2b
$^1$H NMR of reaction of Pt (IV) Complex 2a with triphenyl phosphine
$^{13}$C NMR of reaction of Pt (IV) Complex 2a with triphenyl phosphine
PRL-CF3SE 12 (0.422) Sb (6.60.00); Sm (SG, 10x0.50); Cm (10:15-(1:8+29)x5.000)

Scan ES+ 3.56e6

\[\text{Structure Image}\]