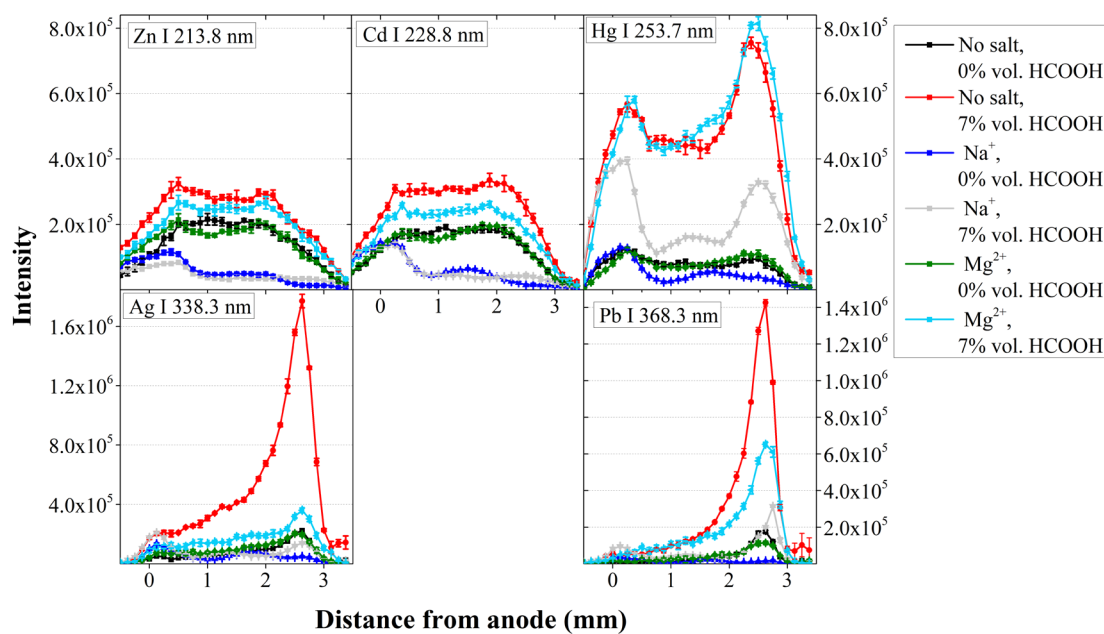


## Concomitant ion matrix effects in SCGD-OES enhanced with formic acid.

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**Fig.S1** HCOOH influence on CVG-prone elemental emission signal spatially resolved pattern, from 0.5 mm above the tungsten anode to 0.5 mm below the solution surface

Table S1: The reduction potential for dissolved CVG-prone elements

Reaction	Reduction Potential (V)
$\text{Li}^+ + \text{e}^- \rightarrow \text{Li}$	-3.04 V
$\text{Sr}^{2+} + 2\text{e}^- \rightarrow \text{Sr}$	-2.90 V
$\text{Na}^+ + \text{e}^- \rightarrow \text{Na}$	-2.71 V
$\text{Mg}^{2+} + 2\text{e}^- \rightarrow \text{Mg}$	-2.37 V
$\text{Zn}^{2+} + 2\text{e}^- \rightarrow \text{Zn}$	-0.76 V
$\text{Fe}^{2+} + 2\text{e}^- \rightarrow \text{Fe}$	-0.45 V
$\text{Cd}^{2+} + 2\text{e}^- \rightarrow \text{Cd}$	-0.40 V
$\text{In}^{3+} + 3\text{e}^- \rightarrow \text{In}$	-0.34 V
$\text{Pb}^{2+} + 2\text{e}^- \rightarrow \text{Pb}$	-0.13 V
$\text{Fe}^{3+} + 3\text{e}^- \rightarrow \text{Fe}$	-0.04 V
$\text{Fe}^{3+} + \text{e}^- \rightarrow \text{Fe}^{2+}$	0.77 V
$\text{Ag}^+ + \text{e}^- \rightarrow \text{Ag}$	0.80 V
$\text{Hg}^{2+} + 2\text{e}^- \rightarrow \text{Hg}$	0.85 V