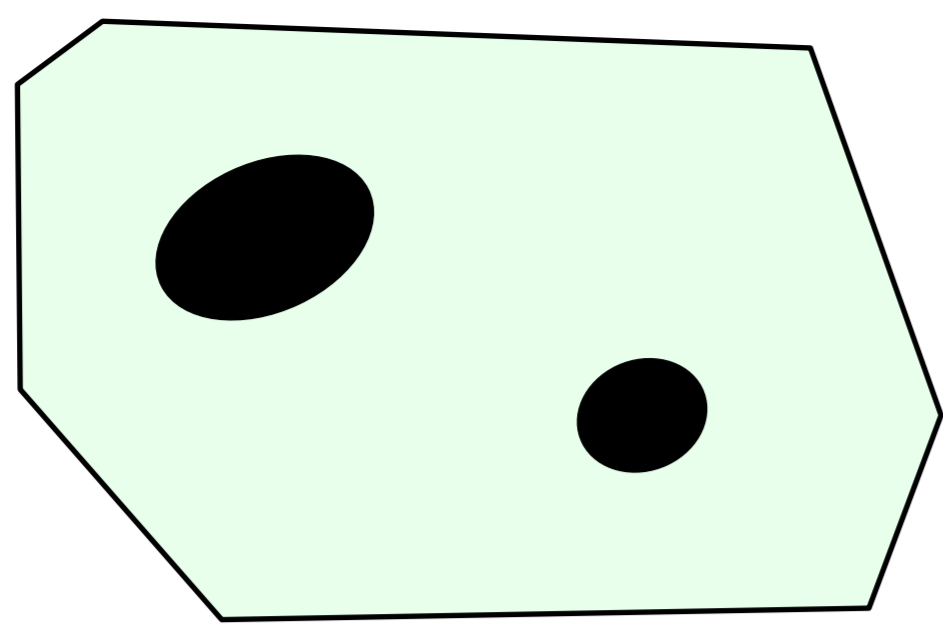


Step 1



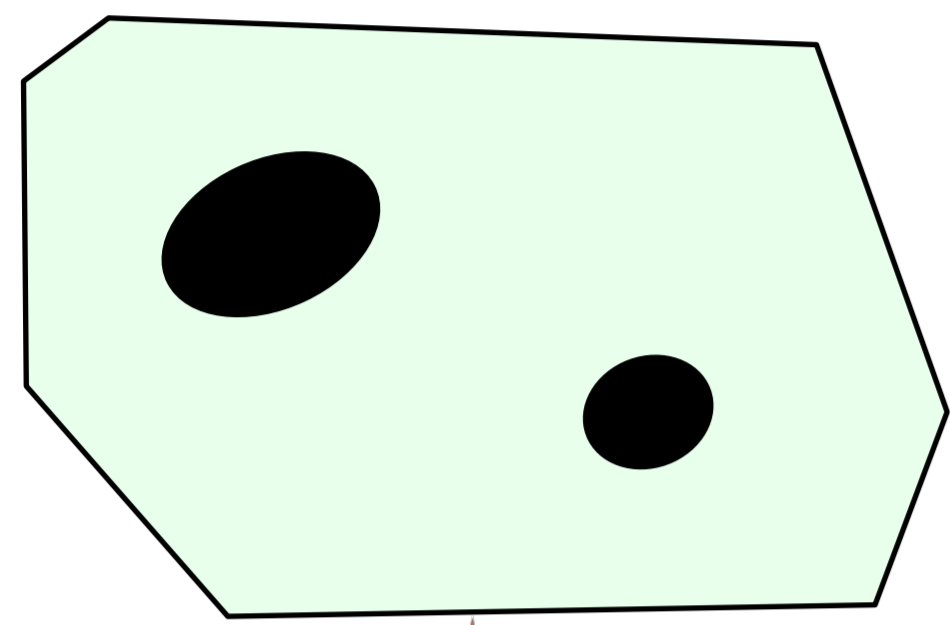
43 olivines containing one or multiple crystallized MI were selected

20 olivines selected for the study by Esposito et al. (2016)

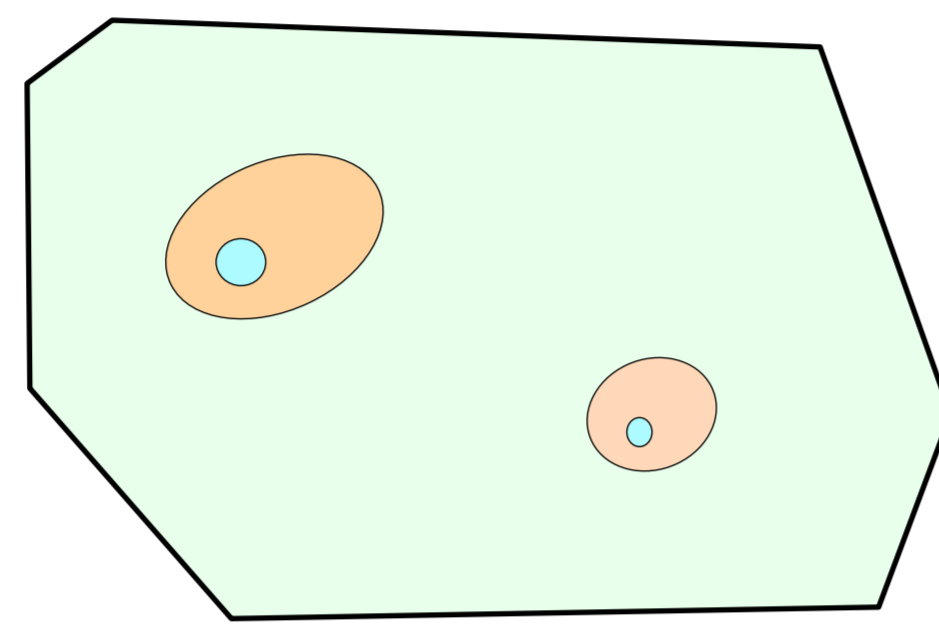
23 olivines selected for this study

selection was made over 100 olivines

Step 2: heating experiments



Step 3: quenching from high T



43 heating experiments

18 experiments performed by Esposito et al. (2016)

25 experiments performed by this study

In 8 experiments MI crystallized microlites or exsolved multiple bubbles.

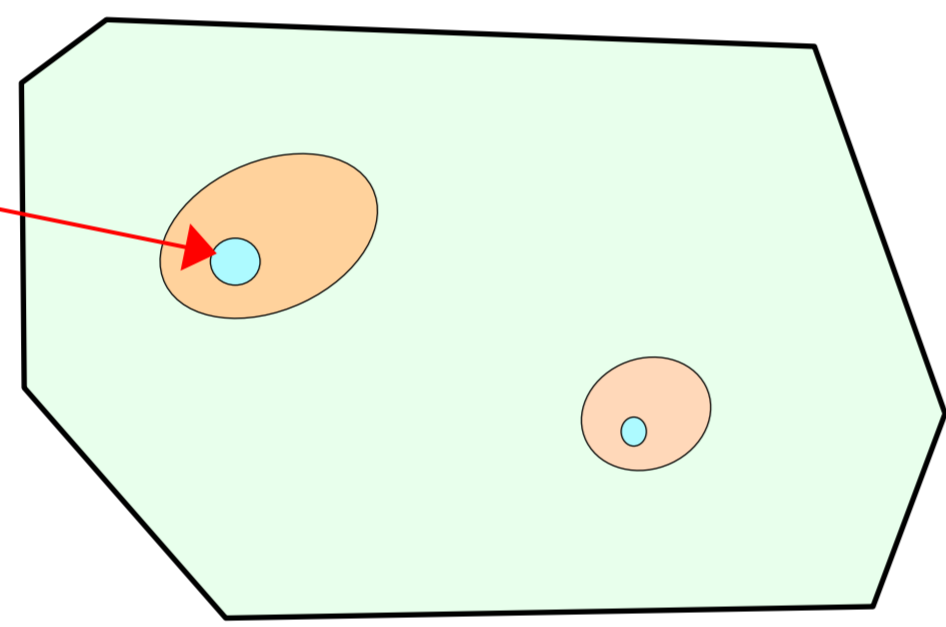
In 4 experiments, MI decrepitated or leaked.

3 olivines were lost during loading-unloading sample.

After quenching, 3 olivines showed MI with decrepitation halos.

All these MI were not analyzed

Step 4: Raman in bubble of MI

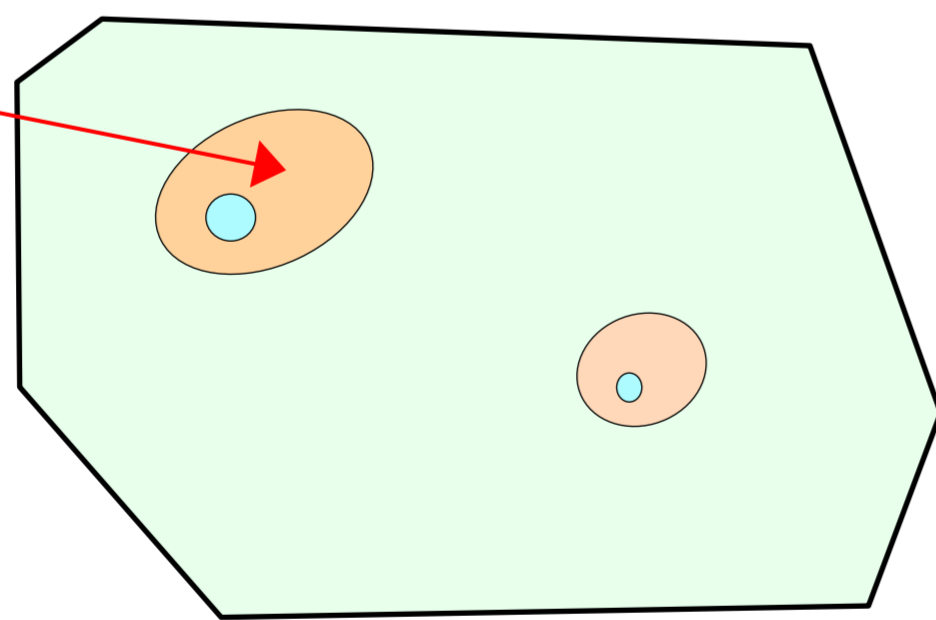


20 bubbles in MI analyzed by Raman

20 bubbles in reheated bubble-bearing MI were analyzed by Esposito et al. (2016)

24 glasses of MI analyzed by EMP

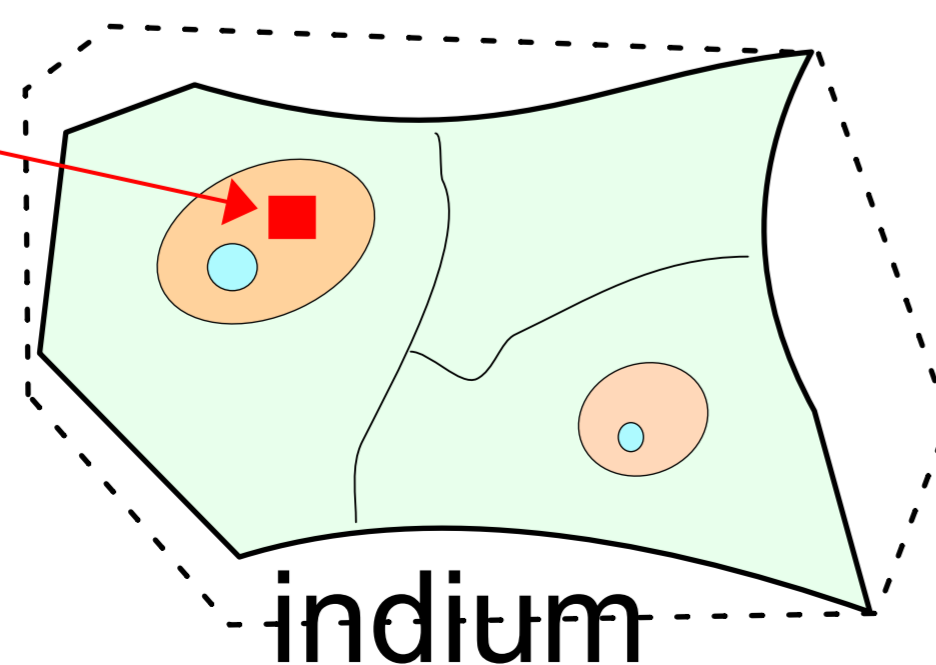
Step 5: EMP on glass of MI



14 glasses of bubble-bearing MI and 10 glasses of bubble-free MI analyzed by this study

some MI were accidentally destroyed or damaged during polishing

Step 6: SIMS on glass of MI



18 glasses of MI analyzed by SIMS

10 glasses of bubble-bearing MI and 8 glasses of bubble-free MI were analyzed by this study

6 MI could not be analyzed by SIMS because they were fractured or covered by the indium paste