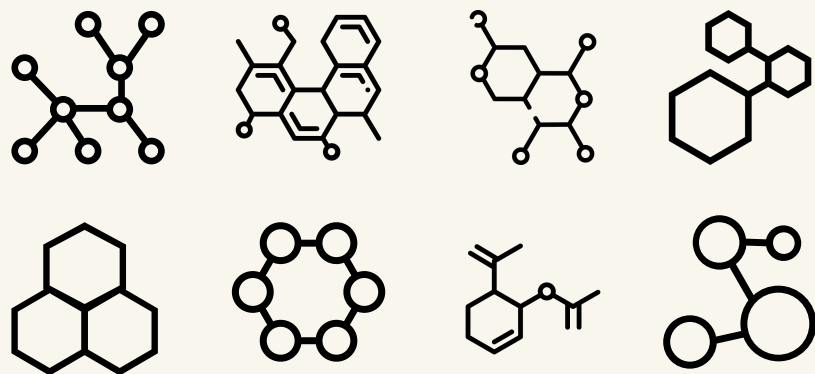| Property-based Pre-selection	Hybrid Property-Structure Filtering	Property-aware Reinforcement Learning

Property-based Pre-selection

query property $s*$
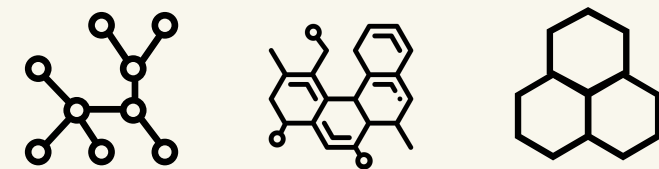
$d_j = |s_j - s*|$

Candidate Pool

Hybrid Property-Structure Filtering

Property Similarity $|s_j - s*|$

Structure Similarity $[\text{hist}_{elem}(\mathcal{G}_j), \text{hist}_d(\mathcal{G}_j)]$

Top-k Candidates

Prefix
[COND_START]
[ELEM_FREQ]
[D_PEAK]
[RAG_END]

Pre-training

Property-aware Reinforcement Learning

Policy Mamba → O_1 O_2 ... O_G → EGNN Reward → R_1 R_2 R_3 ... R_G → Group Computation → A_1 A_2 A_3 A_4 ... A_G

Refer Mamba → O_1' ... O_G'