

The Advanced Combustion and Emission Control (ACEC) Technical Team
 Low Temperature Aftertreatment (LTAT) working group

Including representatives from:

- FCA, Ford, GM, ORNL, PNNL, & DOE

AFTERTREATMENT PROTOCOLS FOR CATALYST CHARACTERIZATION AND PERFORMANCE EVALUATION



Why

- Harmonize aftertreatment direction with emerging combustion strategies
- Assist DOE and USDRIVE in evaluation & management of projects
- A pathway for **comparative** evaluation and benchmarking
- Accelerate pace of catalyst innovation by maximizing value and impact of reported data

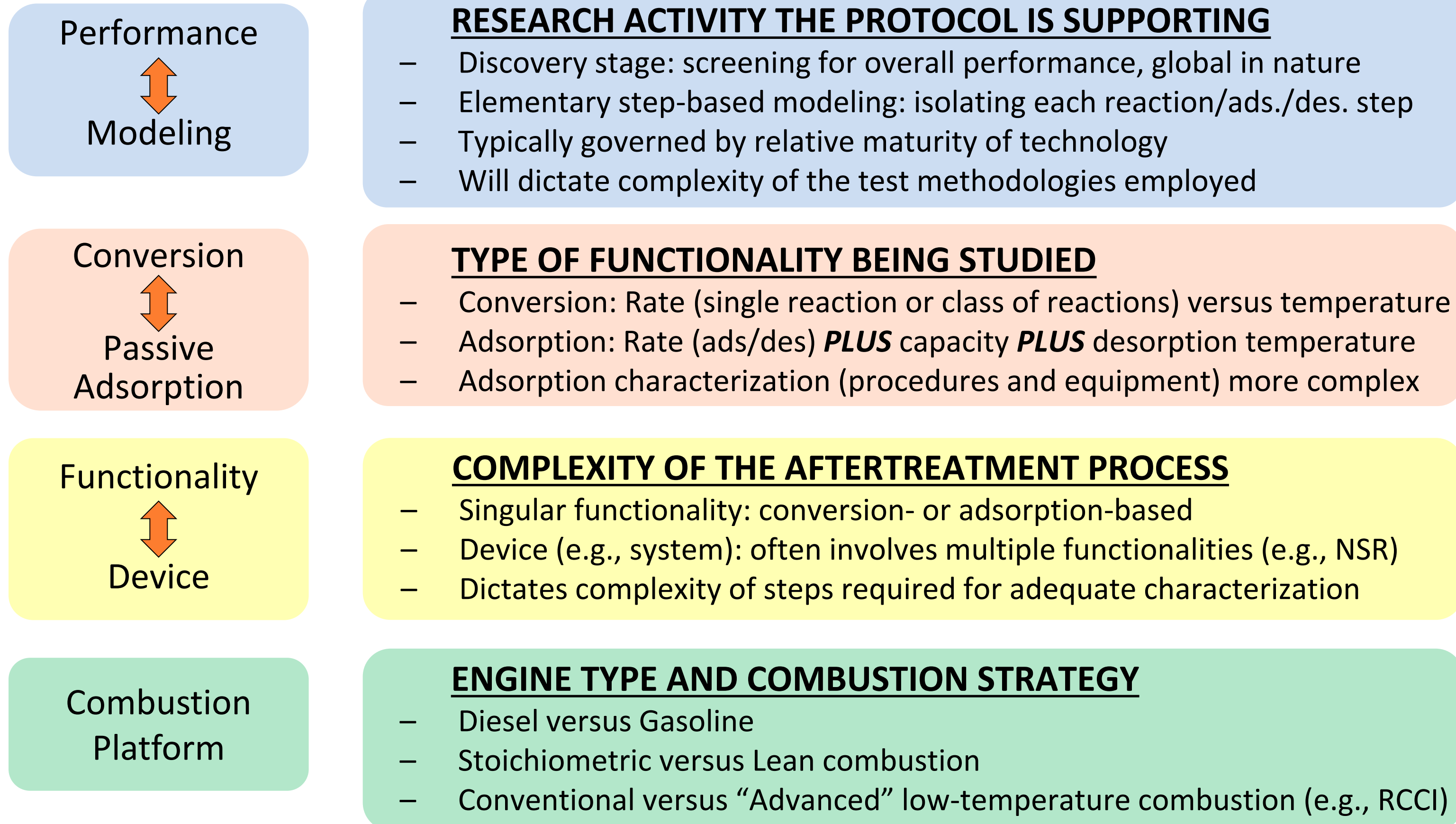
Consistent and realistic standardized catalyst test procedures that sufficiently capture a catalyst technology's performance capability

- ❑ *Solely intended as guidelines for sharing results of research with the technical community*
- ❑ *Meant to be broadly shared in public forum to evaluate and benchmark performance*
- ❑ *NOT meant to replace or dictate individual research institute protocols*

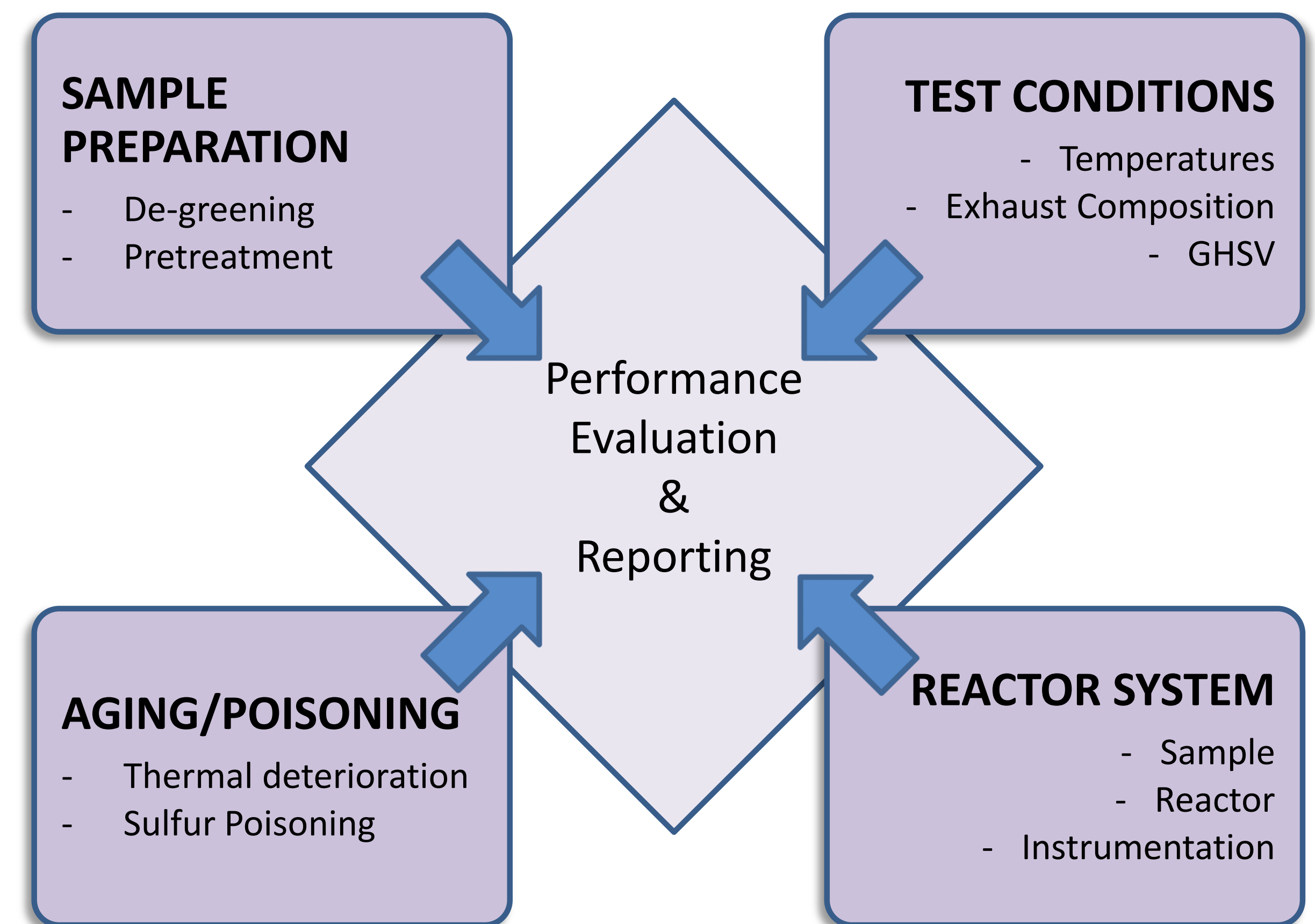
Aspirations

- General community consensus
- Consistent with anticipated technologies
- Reproducible, adaptable in various labs
- Be practical and have utility
- Literature citations

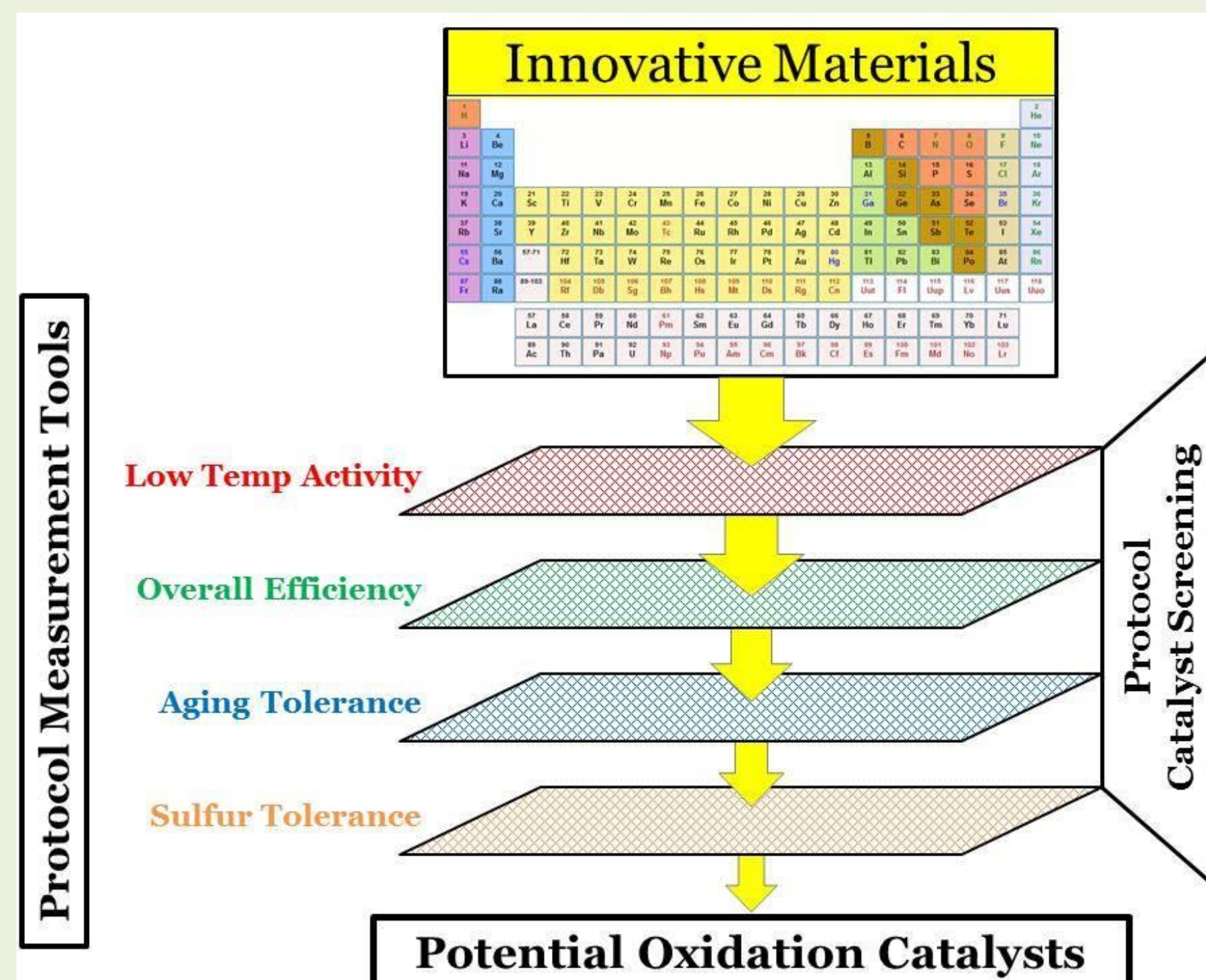
Protocol Considerations



Protocol Structure



STEP 1 – Low-Temperature Oxidation



Performance

Conversion

Functionality AND Device

Easily modified to other **CONVERSION-BASED** applications

Performance-based conversion (oxidation) protocol 1

Passive adsorption protocol 2

Protocols 3+ to be determined

Multi-Functional 3

Cold Start 4

Modeling-Based 5

➤ Additional protocols will be generated as needed based on technology area