

Self Introduction

1. Your background and expertise
2. Your unique capabilities and how you can collaborate with others in the group
3. Your group responsibilities and how you can help others in the group

Rational Design of Surfaces and Interfaces for Energy Storage & Conversion

Presenter

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Advisors:

Outline

1. Background and Motivation
2. Objectives
3. Technical Approach
4. Results and Discussions
 - Developed new materials/understanding of...
 - Characterized microscopic/electrochemical/catalytic properties of...
 - Identified....
5. Conclusions
6. Recommendations for future work
7. Acknowledgement

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Introduction

- Significance of your work/topic?
- The state-of-the-art of your field/topic?
- The critical scientific or technical challenges?
- Which challenge(s) you are addressing?
- Implications and perspectives of overcoming the challenges(s)?

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Objectives: What are the scientific and technical objectives of your study? What is the scientific question you hope to address?

1. **To unravel** the mechanism of;
2. **To develop** a predictive model for ...
3. **To enhance** ionic conductivity...
4. **To achieve** rational design of ...

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Technical Approaches: Clearly outline your scientific approaches to achieve your objectives....

1. **Fabricating** thin films of controlled composition and morphology using PLD....
2. **Probing** surface species using Raman spectroscopy...
3. **Characterizing** electrochemical/catalytic behavior using impedance spectroscopy ...
4. **Predicting** electrode polarization using ...

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Hypotheses: Try to formulate 2 or 3 hypotheses so that your experiments are designed to test the hypotheses

1. Lattice melting at interfaces may allow fast ionic transport....
2. Grain boundaries mayetc....
3. Surface curvature may ...

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Results and Discussion: Clearly present results obtained, detailed analysis and interpretation, implications, key take-away message...

1. **Determined** catalytic activity of
2. **Characterized** electrochemical behavior of ...
3. **Evaluated** long term stability of

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How to organizing results

- Try to present a **clear, simple story**. The simpler, the better.
- You do not have to show all results you have obtained; present only those required to support your **“key” conclusions**.
- Of those results to be presented, group them in a way to clearly support your key conclusions.
- Each slide should be self explanatory, containing key info and highlighting the implications.

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Conclusions: What did you learn from your results? What is the take-away message for your audience?

1. **Unraveled** the mechanism of
2. **Predicted** performance of ...
3. **Enhanced** ionic conductivity of

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A few suggestions for presentation

- **Pace and timing:** Try to target for the time allowed for your presentation. Go through less important slides quickly so that you will have more time to highlight your important results.
- Present your “scientific” and “technical” objectives slowly and clearly; emphasize what you had hoped to accomplish. Also, take time to explain the hypotheses, clearly outline your philosophical and scientific approaches, but not spend too much time on experimental details or less critical results (leave that for questions).
- Present the most significant results slowly and highlight the implications and significance of the key results. Go over other less critical results quickly (leave that for questions).
- Present the conclusions slowly and clearly, emphasize the implications, the significance, and the broader impact.

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Acknowledgement

A list of those who have helped you in your study:

- Advisers
- Collaborators
- Group mates

Financial Support:

- Sponsor of Research Project(s)
- Fellowships/scholarships (if any)
- Center Facilities used (if any)

Structure of Oral Presentation

- **Title Visual (1)**
Title of your presentation; **name** and **affiliation(s)** of presenter (s)
- **Outline (1)**
 The **content** of your presentation
- **Introduction/background visuals**
 Typically 5-20% of total # of visuals: to familiarize the audience with the subject; to define important terms; to state the purpose, significance...
- **Body Visuals** (the heart of your presentation)
 Technical approaches, results, discussions etc...
- **Conclusion Visual** (typically **1**)
 Key message to be left with your audience...

Visual = Headline + Matching Picture

Headline

A clear and concise headline title at the **top of the visual**. It must be **short** (1 line), make an **assertion** and has a “**what**” subject.

Matching Picture

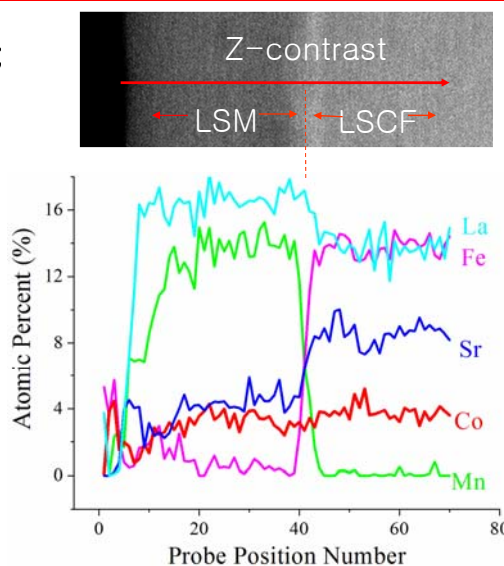
An analogous picture communicating only **one main idea**; the picture area contains **9 information elements or less**.

Impact: A presentation with visuals is **43% more persuasive** than one without.

LSM Film is largely stable on LSCF

- Mn remains within LSM; no detectable Mn in LSCF
- LSM is stable on LSCF
- No Sr enrichment near LSM surface or LSM/LSCF interfaces
- Co diffused into LSM layer, ~2 to 4 at.%

Samples are annealed at 850°C for 900 h



Lynch, EES, 4, 2249-2258 (2011).

What makes a Visual *Effective*?

- **Self explanatory**: Clear & understandable alone on the page
- **Appropriate** to the discussion and placed in an appropriate location
- Integrated with the presentation
- Labeled **completely**
- **Simple** & **uncluttered** with a **maximum of 9 lines/page**
- When in doubt, use **fewer** visuals rather than more (**typically 1 per minute**)
- **Phrases** or **key words** are better than **sentences**
- Be **consistent** with *structure* throughout the visuals
- Use **color**, it makes your visuals **stronger**