

Assessment group presentation 2: instructions

This is a group presentation, in which we assess your understanding of how to search academic literature, and critically interpret what you read.

The degradation mechanism, structure and mitigation strategies assigned to each group are:

- **Group #1** – Carbonation – Dr. Alice Titus Bakera <alice.bakera@epfl.ch>
- **Group #2** – Chloride ingress (marine exposure) – Dr. Beatrice Malchiodi <beatrice.malchiodi@epfl.ch>
- **Group #3** – Chloride ingress (deicing salts) – Dr. Alastair Marsh <alastair.marsh@epfl.ch>
- **Group #4** – Alkali silica reaction (i.e. ASR) - Dr. Federica Boscaro <federica.boscaro@epfl.ch>

Objectives

- Present ≥ 1 examples of a good research article that use a characterisation technique(s) to improve our understanding of degradation mechanism X, and describe the features that make them a good article.
- Present ≥ 1 examples of a bad research article on the same topic, and describe the features that make them bad articles. Total of 2-3 articles evaluated in total.

Competencies to be assessed

- Effectively search the literature for a given topic
- Apply principles of characterisation techniques to understand degradation mechanisms
- Critically summarise the main findings of a research article
- Assess the quality of a research article by relevant criteria (inc. statement of research questions and hypotheses, methodological rigour, detail of explanations, treatment of uncertainties, comparison with previous literature)

Presentation outline

- The general **outline/format** for your presentation should be:

1. Explanation of your search strategy

- a. What were the key decisions you used to form your search strategy?
- b. Which search terms did you use in your initial search?
- c. How did you combine search terms (i.e. use Boolean operators) in your initial search?
- d. From the articles you found, how did you choose the articles you are presenting today?

2. Evaluation of a 'good' research article

- a. For the 'good' research article(s):
 - i. Briefly summarise: the aims of the study, the type of cementitious system investigated, the main characterization techniques used, the main conclusions.
 - ii. Explain how characterization techniques were used to get information/understanding about the reaction products from your degradation mechanism.
 - iii. Evaluate the quality of the research article in terms of: clarity of aims, relevance of characterization methods to the aims; (and any other criteria you think are relevant to each study).

3. Evaluation of a 'bad' research article

- a. For each of the 'bad' research articles:
 - i. Briefly summarise: the aims of the study, the type of cementitious system investigated, the main characterization techniques used, the main conclusions.
 - ii. Explain how characterization techniques were used to get information/understanding about the reaction products from your degradation mechanism (here you are encouraged to be critical about what authors have done).
 - iii. Evaluate the quality of the research article in terms of: clarity of aims, relevance of characterization methods to the aims; (and any other criteria you think are relevant to each study).

Instructions

- **Time limit** = 15 minutes maximum
- The presentation time should be shared approximately equally between the group members. (This should not include the general introduction and thank you for listening slides, and these don't have any scientific content)
- A **characterization method** is defined here as an experimental technique which gives information about the physical and/or chemical characteristics of a material.
- Examples of what are NOT considered to be characterization methods include:
 - Modelling approaches (e.g. thermodynamic modelling)
 - Predictive testing techniques
- We recommend that you begin searching for the techniques explained in the Characterisation lecture – however, you may consider other techniques too.
- Do not include **research articles from LMC** in the examples you share.
- To choose the 'bad' research articles, you must choose from **peer-reviewed journals** (there are many non peer-reviewed journals where the quality is often very poor – but this would make the exercise too easy!)
- You can use review articles to help you find relevant research articles – but the examples you present must **all be research articles**.

- We expect some **basic ‘good habits’** in your presentation – these are:
 - Include slide numbers
 - Ensure that any text on your slides is visible from the back of the lecture theatre (a general rule is minimum font size of 12)
 - We encourage you to use figures and diagrams to help explain your points. These can be from articles in the literature, or you can make your own diagrams too.
 - Include appropriate references for any content included in the presentation that is not your own. This includes, figures, images and quotes.
 - Only cite research articles, or textbooks (unless there is a special reason).
 - Do not cite the lecture slides – find your own sources of information to cite.
- We recommend you use the EPFL powerpoint template, however this is not mandatory.
- You may **ask questions to the Teaching Assistant** assigned to your group. However, you should only ask reasonable and ‘good quality’ questions (and not ‘bad quality questions’). A good quality question is specific, and shows you have already thought about the topic and tried to come up with an answer yourself. A bad quality question is extremely broad, and/or simply asking for the answer.
- Examples of good questions:
 - “We’ve noticed that there are some studies on degradation mechanisms happening at the same time (e.g. chloride ingress and carbonation) – should we exclude these from our scope?”
 - “There are some studies that study the decalcification of C-S-H by exposing synthetic samples to CO₂ – is this the same thing as decarbonation, or a different phenomenon?”
- Examples of bad questions:
 - “We can’t find any good articles for our topic, please can you send us some?”
 - “Can you explain carbonation to us?”
- If the answer of a question is relevant to all groups, we will share the answer with everyone.

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