

A Brief Introduction to the Technical Memo Report

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A technical memo report typically has five sections: *Introduction*, *Experimental*, *Results*, *Discussion*, and *Conclusions*. Under some circumstances the *Results* and *Discussion* sections may be combined (for example when there are few results; this should not be the case in this laboratory). The content of this type of report closely matches that used for technical papers (see, for example, papers published in the journal *Macromolecules*), except that published papers will have a background/literature review included in their *Introduction* and they do not have the memo header.

Many technical reports have an abstract or executive summary; our reports are too short to merit either of these sections. The content of the five sections of a technical report are briefly discussed below.

Introduction: Explain what your objectives are; be complete; do not include anything other than your objectives in your *Introduction*. Whatever objectives you list here must be reported on in the *Conclusions* section.

Experimental: Describe what the experiment consisted of and what equipment you used. Do not include detailed procedures. Do explain your strategy for addressing your objectives. Looking at the analogous section of published technical papers will give you a good idea of what goes into this section and how to structure it. The goal is to give the reader enough information that s/he could repeat your experiments.

Results: Present your results; introduce your tables and graphs. There must be prose here (text). You may not simply insert tables and graphs with no explanation. Postpone detailed comparison and discussion of the results until the *Discussion* section.

Discussion: Discuss your results. Refer back to your tables and graphs and, if needed, introduce new graphs that help put your data and results into context. Tell the reader what you have discovered as a result of your work. Be quantitative. Anything you wish to say in your *Conclusions* section must first be discussed here.

Conclusions: Report on how well you met each of your objectives; be complete. Report on other interesting results that you have previously discussed in the *Discussion* section. Do not introduce anything new in the *Conclusions* (introduce anything new into the *Discussion* section). Be quantitative; that is, give numbers including statistically justified ranges as opposed to saying something is "good" or "high" or "accurate."

Additional general comments on report writing:

- Begin each paragraph with a topic sentence. A topic sentence is a sentence that tells the reader what the topic of the paragraph is. Go to a technical journal and read the first sentence of each paragraph; it should read as an outline of the paper.
- Adopt a professional tone: Do not use contractions; you may use the first person (“I” and “we” are fine); avoid slang and colloquialisms; be formal.
- Use the past tense (the work has already been done).
- You may include appendices; the rule for appendices is that the reader should be able to separate the appendices from the report and lose nothing in terms of understanding the report. Do not put anything essential in the appendices.
- Use references to the literature to support your discussion. We recommend the author, year style for references: (Morrison, 2001) or (Bird et al., 2002).
- Before submitting a report do a final check through for:
 - Number of significant figures are correct
 - All figure/table captions are present
 - Topic sentences form an outline of your report
 - Numbers have been used in preference to words like “good” or “low” or “better”
 - All symbols in equations have been identified
 - All figures/tables are placed appropriately in the document (do not leave large amounts of white space)
 - Nothing essential is in the appendix
 - Reference list is present and references are referred to within the text
 - One-sentence paragraphs have been avoided