Be aware of two immutable rules for abstracts:

Every article submitted to a journal or a conference must have an abstract

The quality of your abstract determines whether anybody actually reads your paper or comes to your talk
Answer four simple questions to create a perfect abstract

1. What problem did you study and why is it important?
2. What methods did you use?
3. What were your main results?
4. What conclusions can you draw from your results?

Make your sentences as specific and quantitative as possible
Control the length of your abstract by the length of your answers to the four questions

- Short abstract? one-sentence answers
- Longer abstract? several sentences
- One-page abstract? one-paragraph answers

Stick to the 4-point rule—
Don’t omit answers to shorten an abstract or add superfluous points to lengthen one
Use this checklist to critique your abstract:

✓ **Subject** of the paper is stated immediately
✓ **Scope and objectives** of the work are described
✓ **Methods** and operational ranges are specified
✓ **Significant findings** are summarized
✓ **Results** are emphasized
Follow these style conventions:

✓ All abbreviations, acronyms, mathematical expressions, and special symbols are defined
✓ Only simple (linear) equations are used
✓ No figures or tables are included
✓ The abstract stands alone
  ▪ No mention is made of figures, tables or equations used in the main text
  ▪ No references are cited
Define all acronyms and initialisms (A&Is)

Write out the words first, followed by the acronym in parentheses ( )

Rossi X-ray Timing Explorer (RXTE)
superconducting quantum interference device (SQUID)

The AIP lists common physics acronyms that need not be defined on first use

BCS (Bardeen–Cooper–Schrieffer)
emf (electromotive force)
NMR (nuclear magnetic resonance)
dc (direct current)

http://www.aip.org/pubservs/style/4thed/AIP_Style_4thed.pdf
Abstract: We examine the formal foundations of quantum electrodynamics in the infinite-momentum frame. We interpret the infinite-momentum limit as the change of variables
\[ \tau = 2^{-1/1}(t+z), \quad Z = 2^{-1/1}(t-z) \]
thus avoiding limiting procedures...
Read your abstract critically

✓ Ideas are expressed clearly and **concisely**
✓ Language is familiar and precise
✓ Standard nomenclature and notation are used
✓ Stylistic conventions are observed
✓ Text is free of typographical errors
✓ Length conforms to instructions from journal or meeting organizers