**Introductory statement defining the scope of review, question to be answered or concept being investigated (80/~100 words).**

In this literature review we will consider the synthesis of Hydrogen gas using inorganic complexes as catalysts to reduce the currently prohibitive energy costs. We will discuss the viability of a variety of processes which yield Hydrogen gas on an industrial scale with a special focus on sustainability; the hope of energy efficient Hydrogen production being to provide a long-term solution to fossil fuels. We will evaluate the progress currently made by considering the 12 principles of green Chemistry.

**Conclusion**

**Brief concluding statement to summarise the key findings/message taken from the selected works (83/~100 words).** From the selected works we can see that there are some very promising looking developments that use a variety of different catalysts and environmental conditions in order to produce Hydrogen gas in an energetically less demanding way than classically. This is a very important factor when Hydrogen gas is being considered as an alternative fuel to traditional fossil fuels, as currently the energy cost is prohibitive. However, none of these processes are perfect, with many relying on rare and expensive elements as catalysts.