

CHAPTER 1

INTRODUCTION

Fire is certainly one of the greatest discoveries in human history, a discovery which is of equal importance to the invention of the wheel in the development of economy. The first productive applications of fire were probably the cooking of food and the heating of caves. Initially, humans were presumably using biomass fuels, solid fuels, as they were the easiest to gather. As civilization development, the utilization of solid fuels extended to the melting of metals and to the burning of coal and of various chemical compounds. Properly controlling, the extensive use of fire as an energy source became an economic theme strongly linked to the process of industrialization. But uncontrolled fire, it can lead to severe material damage and dramatic loss of life.

1-1 The Fire

Fire is the oxidation of a combustible material releasing heat, light, and various reaction products such as carbon dioxide and water. If hot enough, the gases may become ionized to produce plasma. Depending on the substances alight, and any impurities outside, the color of the flame and the fire's intensity might vary. Fire in its most common form can result in conflagration, which has the potential to cause physical damage through the burning.

Fire produces heat and light resulting from the rapid combination of oxygen, or in some cases gaseous chlorine, with other materials. The light is in the form of flame, which is composed of glowing particles of the burning material and certain gaseous products that are luminous at the temperature of the burning material. The conditions necessary for the existence of fire are the presence of a combustible substance, a temperature high enough to cause combustion (called the ignition