لا يمكنني قراءة النص العربي من الصورة. يرجى تقديم النص النقي للإجابة عليه بشكل أفضل.
والباب الثاني هو دراسة عوامل تلف الأسقف الخشبي الملونة حيث تم تقسيم عوامل التلف إلى عوامل تلف داخلية مثل عيب نمو الأشجار وعيب اتجاة الألياف والترتيب المشابك والمتقطع والحصولي والمائل وكذلك اجهادات النمو والعقد الخبية وعيب الصناعة، وعوامل تلف خارجية وهي عوامل التلف الفيزيوكيميائية وهي درجة الحرارة والرطوبة النسبية والضوء والثلوث النجوى والأملاح والتلف البشري والزلازل والإصابة الميكروبيولوجية.

والباب الثالث هو دراسة مقارنة لأعمال ترميم الأسقف الخشبي الملونة حيث تم عمل مقارنة بين بعض أعمال المدرسة المصرية (منزل قايتباي) وبعض البعثات الأجنبية وهي البعثة الفرنسية (مسجد السلحدار) والبعثة البولندية (سبيل محمد علي بالنجاحين) والبعثة الأمريكية (بيت الرزاز) والبعثة الروسية (الكنيسة الملونة) والبعثة الإيطالية (مسرح الدراويش) والبعثة الألمانية (قصر الأمير بشتاك)، حيث تم ذكر مراحل العمل الخاصة بكل بعثة على حدة وذكر الطرق والمواد التي تم استخدامها في عمليات العلاج والصيانة.

الباب الرابع: دراسة تجريبيّة لبعض العينات التي تم إعدادها من قبل الباحث بنفس أسوان تنفيذ الأسقف الخشبي الملونة وتم عمل تقدم للعينات وتعريفها ببعض عوامل التلف وبعد ذلك تم اختبار بعض المواد المقوية وبعض المحاليل الكيميائية لتحديد أحسن طرق العلاج.

ثم دراسة تطبيقية على السقف الخارجي لصهريج سبيل عبد الرحمن حيث تم عمل الفحوص والتحاليل اللازمة لمعرفة طبيعة الأثر ثم تم وضع خطة عمل تم تطبيقها في علاج السقف الخشبي الملون.
The First chapter discusses the historic development of wooden ceilings during the Islamic periods beginning from the Abbasid era, followed by the Tulunid era in Egypt, to which the Ahmed Ibn Tulun mosque dates back.

The Fatimid era is famous with its variety of plant decorations, engineering and inscriptions and Al Azhar mosque is the most important building of that period. That was followed by the Ayubbid era, to which the Imam el Shafey Dom dates back. The Mameluk era was the golden era of Islamic architecture as the Moslems succeeded in the decoration of wood ceilings, and left us with extremely rich buildings, such as the Beshtak Palace. Last but not least the Ottoman period left behind it beautiful architectural monuments rich in drawings and designs, such as the ceilings of El Selehdar mosque.
After that the differences of the chemical composition of the materials used in the wooden ceilings starting with the chemical structure of the wood which contains lignin, cellulose, hemicelluloses and pectin were dealt with. That was followed by the composition and general characteristic of the painting materials which were used throughout the ages.

The most common colors were discussed, such as the white color and its most important raw materials that used to obtain that color which were calcium carbonate, gypsum, white lead, white zinc and white titanium. Then we handled the yellow color and its raw materials as the yellow ochre, orpiment and cadmium. The green color usually consisted of malachite, cobalt green, chrysscolla, atacamite, paratacamite and green mud. In the case of the red color the most important raw materials were the red ochre, the red lead and sienna red and the black coloring materials and its main sources were usually either of natural or industrial origin and graphite.

The process of gilding used during the different Islamic eras depended on the use of oil and glue gilding, in which the tools such as a gilding cushion, gilding knife and gilding tip were used.

In the Second chapter, we studied factors and causes of deterioration of wooden ceilings in Islamic Architectural Buildings in Cairo. Each deteriorating factor and its effects on the wooden ceilings with its different preparation and painting layers was monitored. Additionally the effects of deteriorating factors on the consolidation when present were documented. The deteriorating factors included the effect of humidity, heat and light, in addition to the effect of air pollutions, acid rain and salts. Biodeterioration, the human deterioration and natural crisis were included.
The Third chapter is a comparative study on the conservation techniques applied on wooden ceilings in Islamic monuments during the second half of the 20th century. In this study we compared between the conservation works of six conservation schools, as follows:

- the Egyptian works at Qaytbay house,
- the French school at Selehdar mosque,
- the American research institute at Elrazaz house,
- the German cultural institute at Beshtak palace,
- the Italian cultural center in Hassan Sadaka tomb,
- Polish school at Sabil Mohamed Ali.

In the Fourth chapter an applied study on the wood ceiling on the “Sabil Abd Elrahman Khatkhoda” in Cairo was done. A brief study on the biography of the owner who established the Sabil was done, in addition to its history and location of the site. The external wooden ceiling of the Sehreg was studied, defining the various components of the ceiling by analysis using X-ray diffraction for four samples of coloring material from the ceiling. FTIR was used for identifying the paint medium.

Laboratory experiments and tests were undergone by preparing similar models in constitution with the ceiling in terms of the type of wood, preparation layers, colors and medium. Consolidation process using four commonly used consolidants were evaluated:

1- Poly vinyl acetate 
2- Klucel G
3- Paraloid B72 
4- Primal
Samples were exposed to the natural atmospheric conditions, so as to evaluate the effects of consolidation materials on colors.

That was followed by evaluating the cleaning process by seven commonly used cleaning materials as follows:

1- Acetic acid 5%                          2- Acetic acid 50%
3- D.M.F + toluene 1:1                 4- D.M.F + toluene 2:1
5- Methyl alcohol                          6- toluene
7- Citric acid

These materials were applied on three types painting layers found on wooden, as follows:

1- Oil colours      2- Water colours    3- preparation layer with oil colours.

The effect of the solvents and solutions on the different layers was carefully studied using a microscope.

The studied was concluded with a discussion of the results obtained during the experimental part of the thesis.