微生物礦化製備高光催化性能之奈米氧化鋅生物白水泥混凝土

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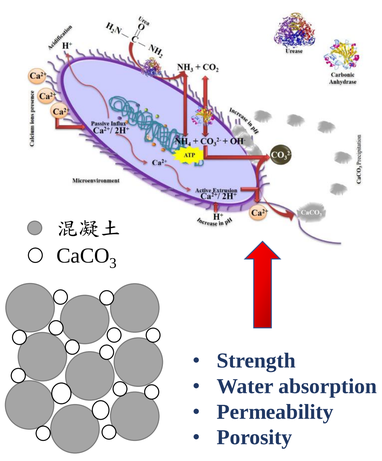
Summary

The main purpose of this research is to use Microbial Induced Precipitation (MIP) to combine nano-zinc oxide with concrete, and the biological method is used to replace the traditional preparation methods such as direct addition and coating of photocatalytic composites. The method can directly synthesize nano-zinc oxide in the cement material, which can make the nano-zinc oxide evenly distributed in the cement material, fill the micro-cracks in the structure, and enhance the strength of the concrete. At the same time, it endows the traditional building materials with photocatalytic properties to produce new multifunctional composite materials.

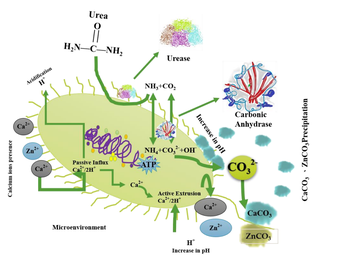
一、計畫目標

MICP

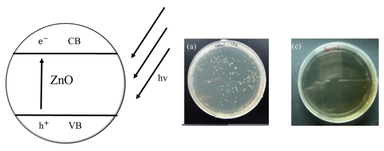


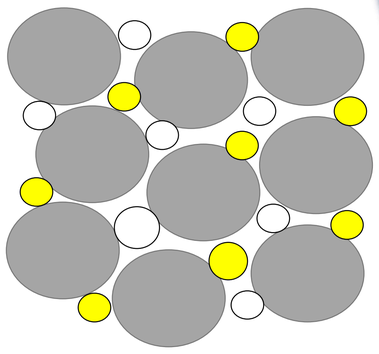
- Strength
- Water absorption
- Permeability
- Porosity

MIP



- Antimicrobial characteristics
- Photocatalytic efficiency
- Self cleaning





- Strength
- Water absorption
- Permeability
- Porosity
- Antimicrobial characteristics
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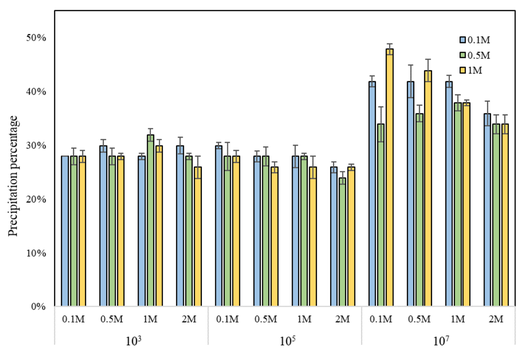
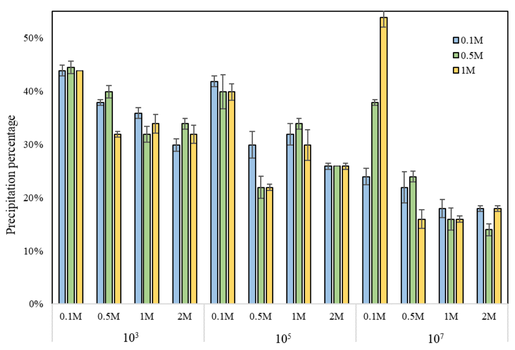
二、主要執行成果

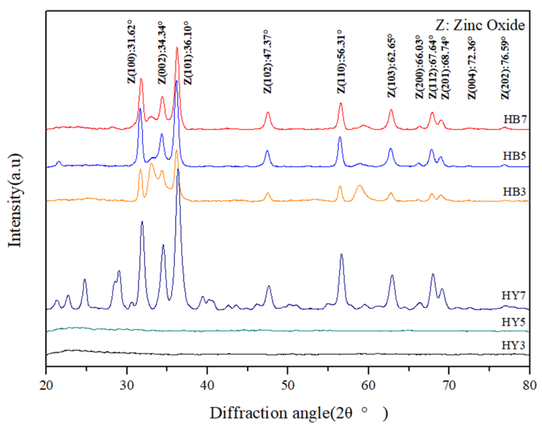
NH4-YE培養基沉澱實驗



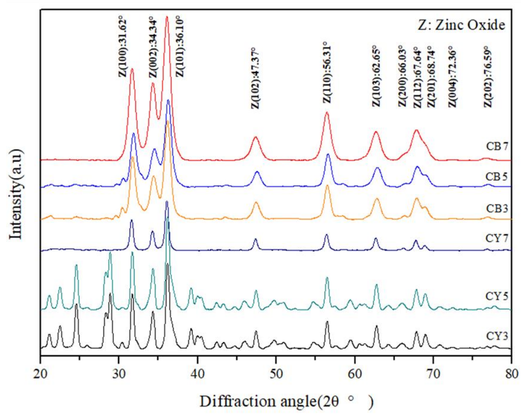
NH4-YE-BS培養基沉澱實驗

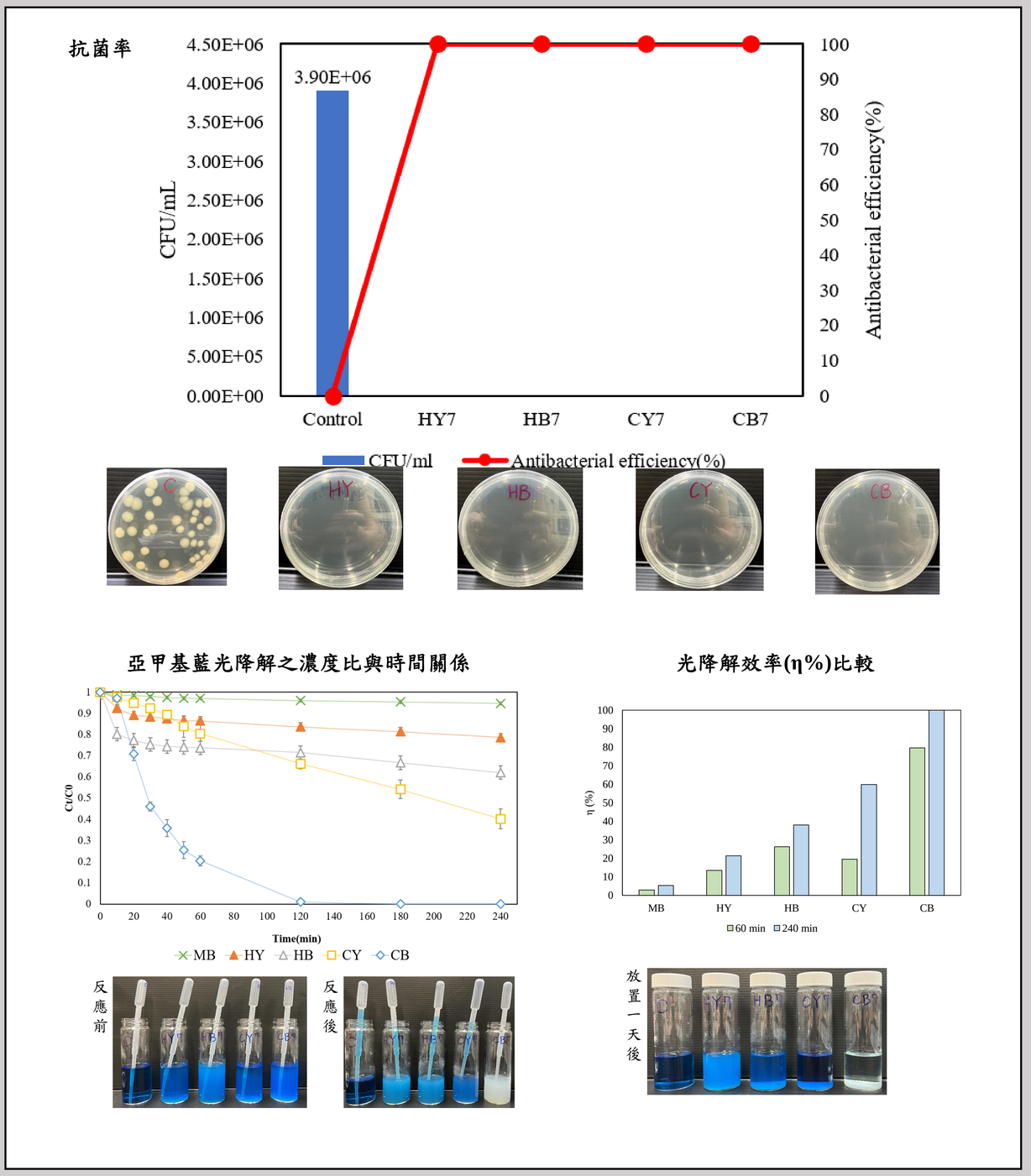


水熱法

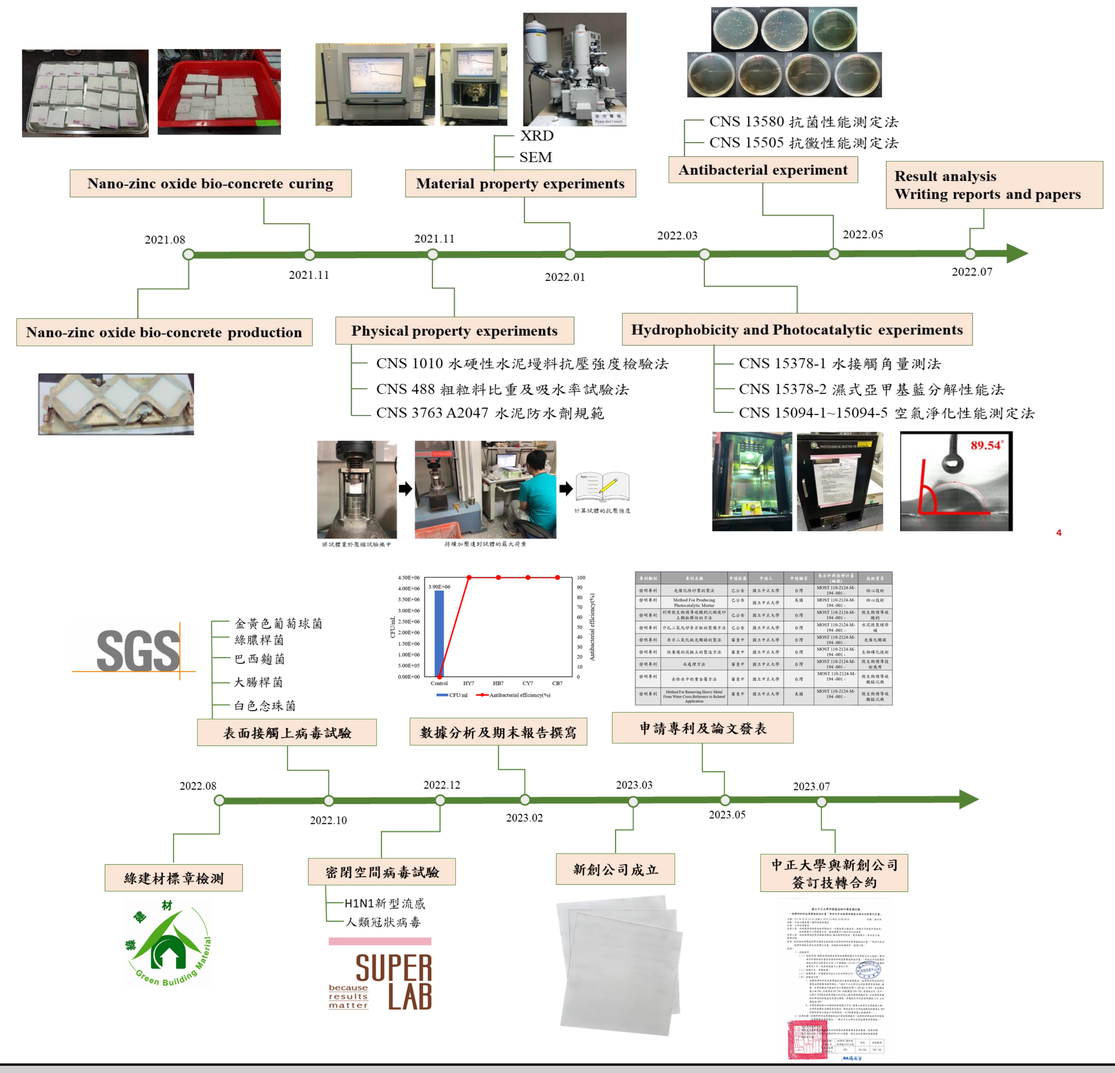


鍛燒

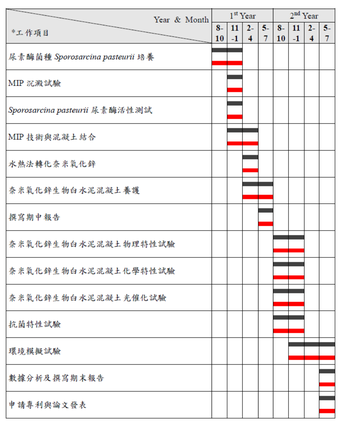




三、後續工作之推動重點與需求



四、執行進度



五、研究團隊

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