硫脲石墨烯回收金技術

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http://enve.ntu.edu.tw/dispPageBox/giee/GieeCP.aspx?ddsPageID=GIEETCFULL&dbid=3852961941

市場及需求:
高科技廠於生產積體電路板過程中，在電鍍電路板時會產生含金廢水;另外廢電子電器設備回收廠在處理電路板時，亦會產生出大量的含金廢水，部分情況下金的濃度極低傳統技術難以回收，由於金是高單價貴重金屬，因此回收廢水中之金有其技術發展之需求。

技術摘要(含成果):
本技術合成硫脲石墨烯，其對含金廢水(金濃度 10 mg/L)進行選擇性吸附金之實驗，結果顯示金之回收率可達 98.3%。

優勢:
目前電鍍廢水中金之吸附材以離子交換樹脂為主，由於電鍍廢水可能同時含有大量硝酸，離子交換樹脂樹脂在硝酸體系中無法產生作用，且吸附金之離子交換樹脂多以焚化方式回收金；本技術所採用之吸附材為硫脲石墨烯，在硝酸體系仍具有選擇性吸附金之作用，且可有效脫附回收金並多次循環使用。

競爭產品:
離子交換樹脂
專利現況:
專利申請中
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Recovery of gold by thiourea graphene

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Experience:

http://enve.ntu.edu.tw/dispPageBox/giee/GieeCP.aspx?ddsPageID=GIEETCFULL&dbid=3852961941

Market Needs:

Hi-tech factory and printed circuit board resource recycle industry produce a marked amount of wastewater containing Au. The Au may be present in low concentration and difficult to recover by traditional methods. Because of the high value of Au, it is highly necessary to develop an effective technology to recover Au from the wastewater.

Our Technology:

This technology aims at synthesis of thiourea graphene. The selective recovery of Au by developed thiourea graphene can achieve 98.3% at the Au concentration of 10 mg/L in wastewater.

Strength:

At present, ion-exchange resin is the major material for recovering Au from plating wastewater. However, plating wastewater could be highly acidic due to the presence of nitric acid, resulting in the failure of ion-exchange resin. Additionally, incineration is the typical approach to recover Au from the adsorbed resin, resulting into secondary pollution. Using thiourea graphene as adsorption material can not only possesses an outstanding performance for adsorption of low-concentration Au under acidic condition, but also easy to recover Au by desorption with specific solvent.

Competing Products:

Ion-exchange Resin

Intellectual Properties:

The technique is applying for patent.

Contact (do not need to fill out):

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