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**An overview of the most common lab-made coating materials in solid phase
microextraction**

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ABSTRACT

In the present review, five well-established groups of lab-made SPME coatings materials including metal organic frameworks (MOFs), layered double hydroxides (LDHs), molecular imprinted polymers (MIPs), conductive polymers (CPs), ionic liquids (ILs), and all their derivations have been evaluated comprehensively, and their unique features, well-proven significant extraction performances as well as drawbacks have been also examined. This paper aims to give a comprehensive overview of what these materials are, why they are proper choices for SPME coatings, and what strengths and drawbacks have been associated with their usage as SPME coatings. Moreover, the present review provides information about the perspective developments regarding SPME coating materials.

Keywords: Solid phase microextraction; Coating materials; Metal organic frameworks; Layered double hydroxides; Molecular imprinted polymers; Conductive polymers; Ionic liquid

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