Supporting Information

Preparation of Polyaniline/Emulsion Microspheres Composite for Efficient Adsorption of Organic Dyes

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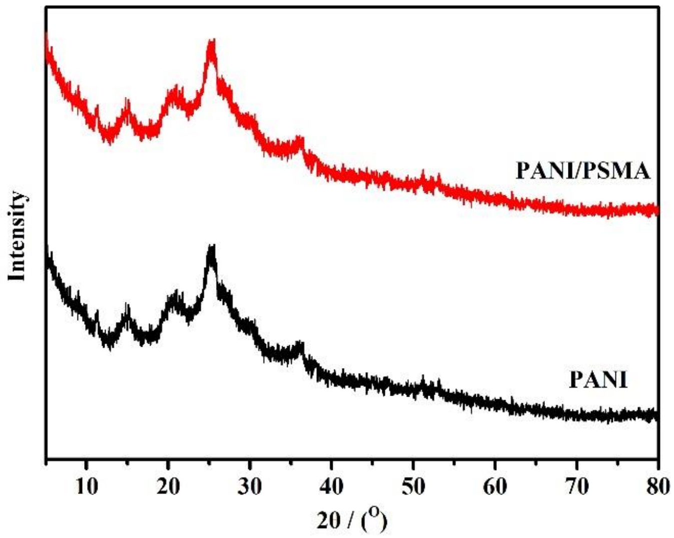

Figure S1. The XRD pattern of PANI and PANI/PSMA.

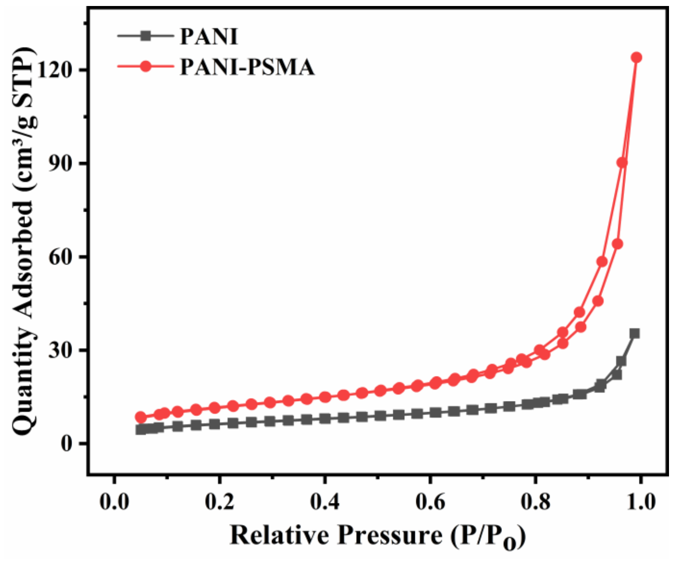

Figure S2. The N_2 adsorption-desorption curves of PANI and PANI/PSMA.

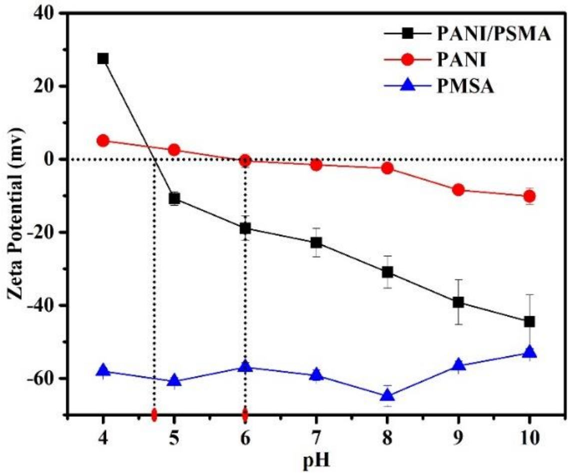

Figure S3. The Zeta potential curves of PANI, PSMA and PANI/PSMA.

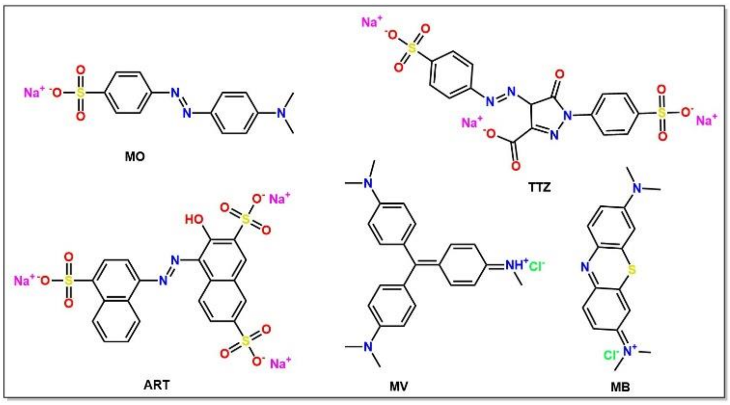

Figure S4. The structure of anionic dyes (MO, TTZ, ART) and cationic dyes (MB, MV).

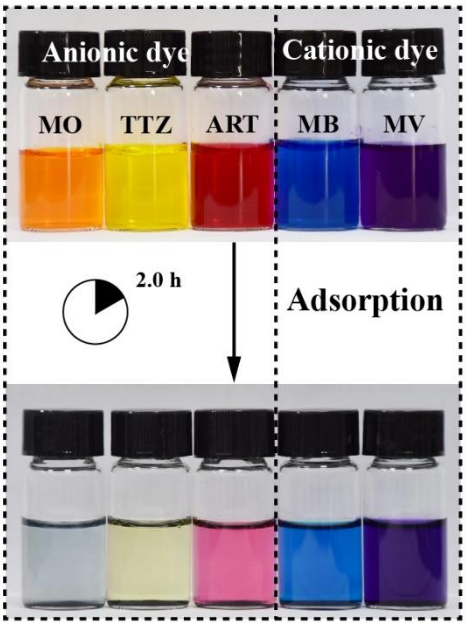

Figure S5. The images of different dyes before and after adsorption by PANI/PSMA.

Table S1. Comparison of adsorption capacity of PANI/PSMA with other adsorbents.

Adsorbents	Dye types	Q_{max} (mg/g)	References
PANI-PSMA	MO	**147.93**	**Present study**
Immobilized PANI	MO	77.5	[1]
Suspended PANI	MO	125	[1]
Polyaniline nanofibers	MO	25	[2]
PANI-HNTs	MO	87.03	[3]
Polyaniline nanotubes base/silica composite	MB	10.31	[4]
PANI / PA 6 composite fiber	MO	58.7	[5]
biochar adsorbent	MO	39.37	[6]
amorphous carbon nanotubes	MO	21.51	[7]
CuO/NaA zeolite	MO	79.49	[8]
$CoFe_2O_4$/LDH nanocomposites	MO	137	[9]
graphene oxide	MO	16.83	[10]
furfural residue	MO	54.95	[11]
goethite impregnated with chitosan beads	MO	84	[12]
CO_3O_4 nanoparticles	MO	46.08	[13]
LDH@Fe_3O_4/PVA NC 6 wt%	MO	19.59	[14]
UiO-66-NH_2	MO	86.2	[15]
Modified silkworm exuviae	MO	87.03	[16]
MWCNTs	MO	51.74	[17]
Magnetic Maghemite/Chitosan Nanocomposite Films	MO	28.94	[18]
Porous Carbon	MO	337.8	[19]
N6-PANI nanocomposite web	MO	370	[20]

Table S1 listed the adsorption capacity of PANI-PSMA and other adsorbents. It was shown that the adsorption capacity of PANI-PSMA is higher than that of most other types of adsorbents[1-18].Although some absorption systems with even higher adsorption capacity have been developed [19,20],those absorbents, however, either suffer from a harsh manufacturing process, such as high temperature[19],or involving in heavily use of organic solvents and strong acids[20],which generate substantial quantities of waste liquids and results in adverse effects on the environment, the drawbacks inevitably hindered the large-scale production and application. In contrast, the preparing process of PANI-PSMA does not involve in harsh conditions or use any organic solvents or acids, therefore, the as-prepared PANI-PSMA adsorbent provides a good alternative for effective removal of organic dyes from aqueous solution.

References

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