

Supplementary Materials

Zhaojie Wu ¹, Chuanshuo Wang ², Guichun Yang ¹, Shiming Chen ¹, Jimiao Duan ^{1,*} and Yan Chen ^{1,*}

¹ Army Logistics Academy, Chongqing 401331, China; georgewu2019@163.com (Z.W.); hongchang5270@163.com (G.Y.); skydsm@126.com (S.C.)

² Jiangsu Key Laboratory of Oil-Gas & New-Energy and Transportation Technology, Changzhou University, Changzhou 213000, China; wangchuanshuo@cczu.edu.cn

* Correspondence: duanjimiao@126.com (J.D.); yansohucom@sohu.com (Y.C.)

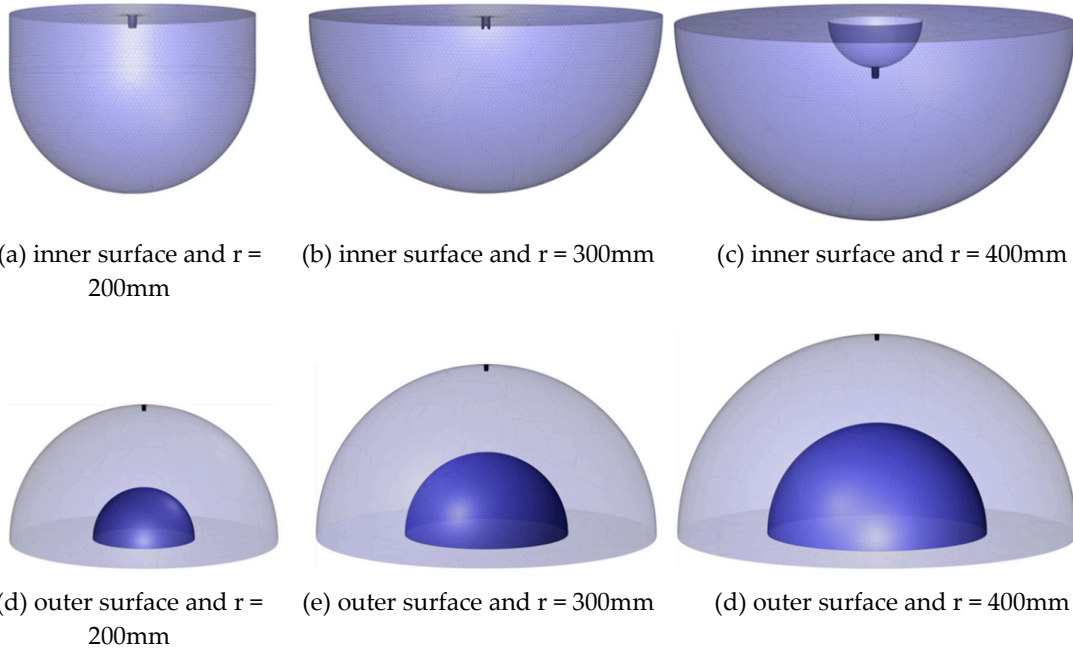


Figure S1. Fluid regions of static spraying on spherical surfaces. (a) inner surface and $r = 200\text{mm}$; (b) inner surface and $r = 300\text{mm}$; (c) inner surface and $r = 400\text{mm}$; (d) outer surface and $r = 200\text{mm}$; (e) outer surface and $r = 300\text{mm}$; (f) outer surface and $r = 400\text{mm}$.

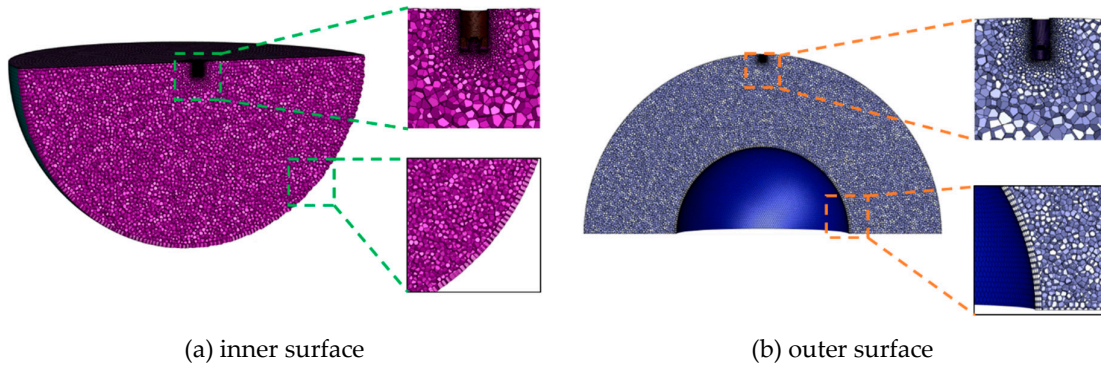
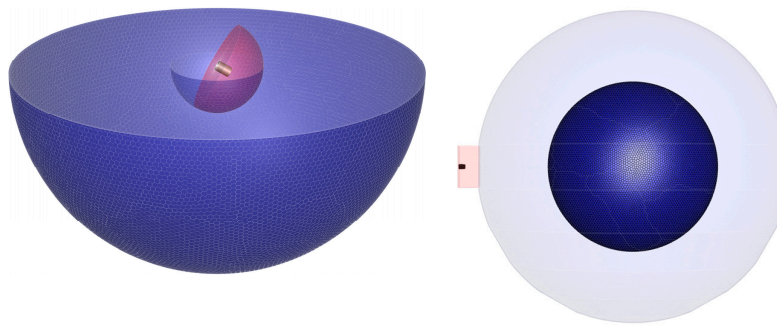


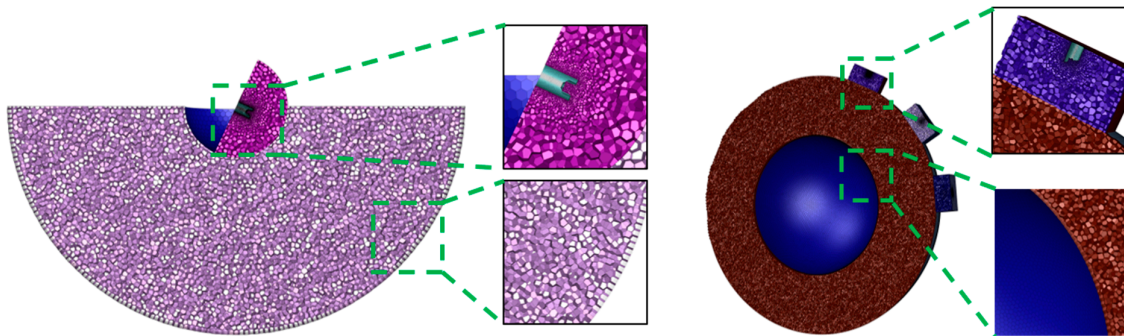
Figure S2. Meshes of static spraying on spherical surfaces. (a) inner surface; (b) outer surface.



(a) inner surface

(b) outer surface

Figure S3. Fluid regions of dynamic spraying on spherical surfaces. (a) inner surface; (b) outer surface.



(a) inner surface

(b) outer surface

Figure S4. Meshes of dynamic spraying on spherical surfaces. (a) inner surface; (b) outer surface.



(a) airless spraying machine



(b) air compressor



(c) automatic spray gun



(d) automatic spraying device

Figure S5. Airless spraying machine and supporting equipment. (a) airless spraying machine; (b) air compressor; (c) automatic spray gun; (d) automatic spraying device.

Table S1. Physical and chemical parameters of paints.

| Items | Values | Implementation standards |
|------------------------------------|----------|--------------------------|
| Color | Gray | GB/T9761-2008 |
| Flash point (°C) | ≥26 | GB/T5208-2008 |
| Viscosity (TU-4 cup viscometer, s) | ≥50 | GB/T1723-1993 |
| Particle size (μm) | ≤60 | GB/T1724-1989 |
| Surface drying time (h) | ≤0.5 | GB/T1728-1989 |
| Complete drying time (h) | ≤10 | GB/T1728-1989 |
| Solid component content (%) | ≥55 | GB/T1725-2007 |
| Density (g/ml) | 1.40±0.1 | GB/T6750-2007 |
| Adhesive force (MPa) | ≥3 | GB/T5210-2006 |