1.The movie shows the film rotation under variant electric field and/or electrolysis voltage. Following table indicates the values during the experiment.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time | ‎0‎ | ‎2‎ | ‎4‎ | ‎5‎ | ‎7‎ | ‎11‎ | ‎14‎ | ‎15‎ | ‎17‎ | ‎27‎ | ‎29‎ | ‎31‎ |
| Electrolysis voltage (V)‎ | Off | ‎+400‎ | Off | ‎+400‎ | Off | ‎-400‎ | Off | ‎-400‎ | ‎-400‎ | ‎-400‎ | Off | ‎+400‎ |
| Electric field(kV/m)‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | from 36 to 129‎ | ‎129‎ | ‎129‎ | ‎129‎ |

Electrolysis cell dimensions:  12 ×15 mm2  
Glycerin volume fraction:  0.375

2.The movie shows the film rotation under variant electric field and/or electrolysis voltage. Following table indicates the values during the experiment.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time(s)‎ | ‎0‎ | ‎1‎ | ‎+1‎ | ‎5 | ‎+5‎ | ‎10‎ | ‎+10‎ | ‎14‎ | ‎25 | ‎32‎ | ‎33‎ |
| Electrolysis voltage(V)‎ | ‎+536‎ | Off | ‎+536‎ | Off | ‎-536‎ | Off | ‎-536‎ | ‎-536‎ | ‎-536‎ | Off | ‎+536‎ |
| Electric field(kV/m)‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | from 36 to 129‎ | ‎129‎ | ‎129‎ | ‎129‎ |

Electrolysis cell dimensions:  12 ×15 mm2  
Glycerin volume fraction:  0.375

3.The movie shows the instance that external electric field passes threshold and rotation starts.  
Electrolysis cell dimensions:  31 × 31 mm2  
Glycerin volume fraction:  0.02

4.Rotation in a rectangular electrolysis frame. It shows how boundary conditions controls the number and shape of vortices.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time(s)‎ | ‎0‎ | ‎2‎ | ‎12‎ | ‎15 | ‎23‎ | ‎26‎ | ‎34 | ‎37‎ | ‎41‎ | ‎56 |
| Electrolysis Voltage(V)‎ | Off | ‎176‎ | Off | ‎176‎ | Off | ‎-176‎ | Off | ‎-176‎ | ‎-176‎ | ‎-176‎ |
| Electric Field(kV/m)‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | ‎36‎ | from 36 to 144‎ | ‎144‎ |

Electrolysis cell dimensions:  10 ×31 mm2  
Glycerin volume fraction:  0.375

5.A 30 × 50 mm2 electrolysis cell is partitioned to about 10 × 10 mm2 squares using cotton string. 

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time(s)‎ | ‎0 | ‎1‎ | ‎9 | ‎10‎ | ‎15‎ | ‎20 | ‎33‎ | ‎34‎ | ‎44 |
| Electrolysis voltage(V)‎ | Off | ‎+528‎ | Off | ‎+528‎ | ‎+528‎ | ‎+528‎ | Off | ‎-528‎ | ‎-528‎ |
| Electric field(kV/m)‎ | ‎62.5‎ | ‎62.5‎ | ‎62.5‎ | ‎62.5‎ | 62.5 to 125‎ | ‎125‎ | ‎125‎ | ‎125‎ | 125 to ‎zero |

6. Electrolysis voltage: 120 V  
Electric field: 60 kV/m   
Electrolysis cell dimensions:  31 × 31 mm2  
Glycerin volume fraction:  0.14

7.Electrolysis voltage: 120 V  
Electric field: 60 kV/m   
Electrolysis cell dimensions:  31 × 31 mm2  
Glycerin volume fraction:  0.22

8. A 30 × 50 mm2 electrolysis cell is partitioned to about 10 × 10 mm2 squares using cotton string. The movie has been recorded approximately 5 minutes after the rotation has been started.