FLOW PAST A SPHERE

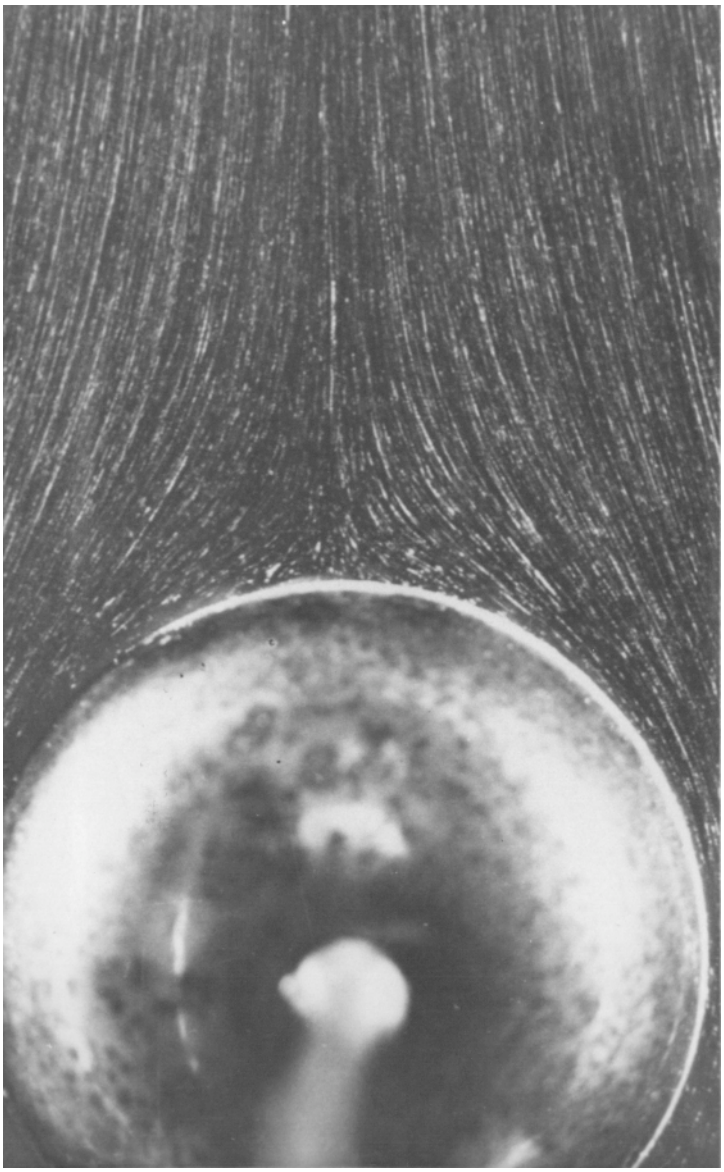

Image ID : SPHER-01
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Streamline pattern around a sphere (R=9.15)
Notes : Static watertank experiment.
Streamline pattern visualized by suspending aluminum powder.
Diameter of the sphere d =19.8. Steady flow.

Author : S. Taneda
Published in : 1956
Copyright : Physical Society of Japan
Reproduced from: S.Taneda: J. Phys. Soc. Jpn, Vol.11, No.10 (1956) 1104.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streamline
Shape features : Sphere, Axial symmetry

Image ID : SPHER-02
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Streamline pattern around a sphere (R=17.9)
Notes : Static watertank experiment.
Streamline pattern visualized by suspending aluminum powder.
Diameter of the sphere d =19.8. Steady flow.

Author : S. Taneda
Published in : 1956

Reproduced from: S.Taneda: J. Phys. Soc. Jpn, Vol.11, No.10 (1956) 1104.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streamline
Shape features : Sphere, Axial symmetry

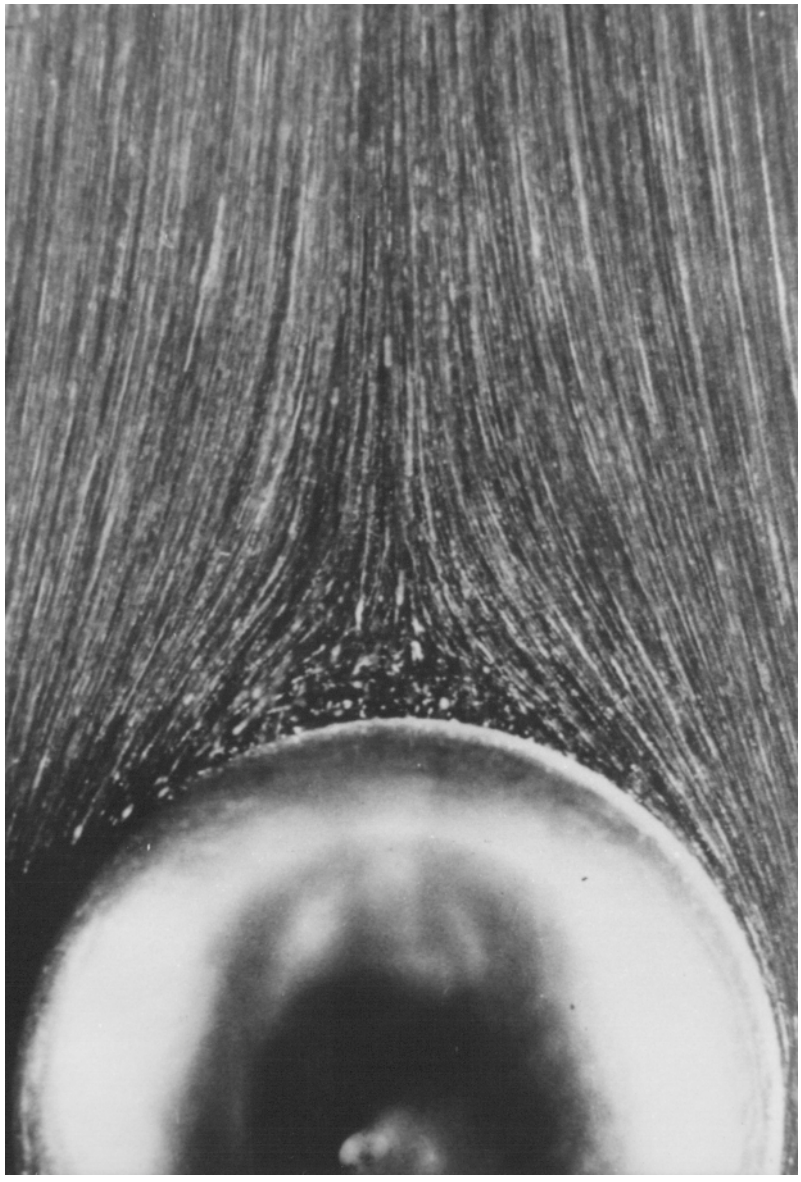

Image ID : SPHER-03
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Streamline pattern around a sphere (R=26.8)
Notes : Static watertank experiment.
Streamline pattern visualized by suspending aluminum powder.
Diameter of the sphere d =19.8. Steady flow.

Author : S. Taneda
Published in : 1956
Copyright : Physical Society of Japan
Reproduced from: S.Taneda: J. Phys. Soc. Jpn, Vol.11, No.10 (1956) 1104.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streamline
Shape features : Sphere, Axial symmetry

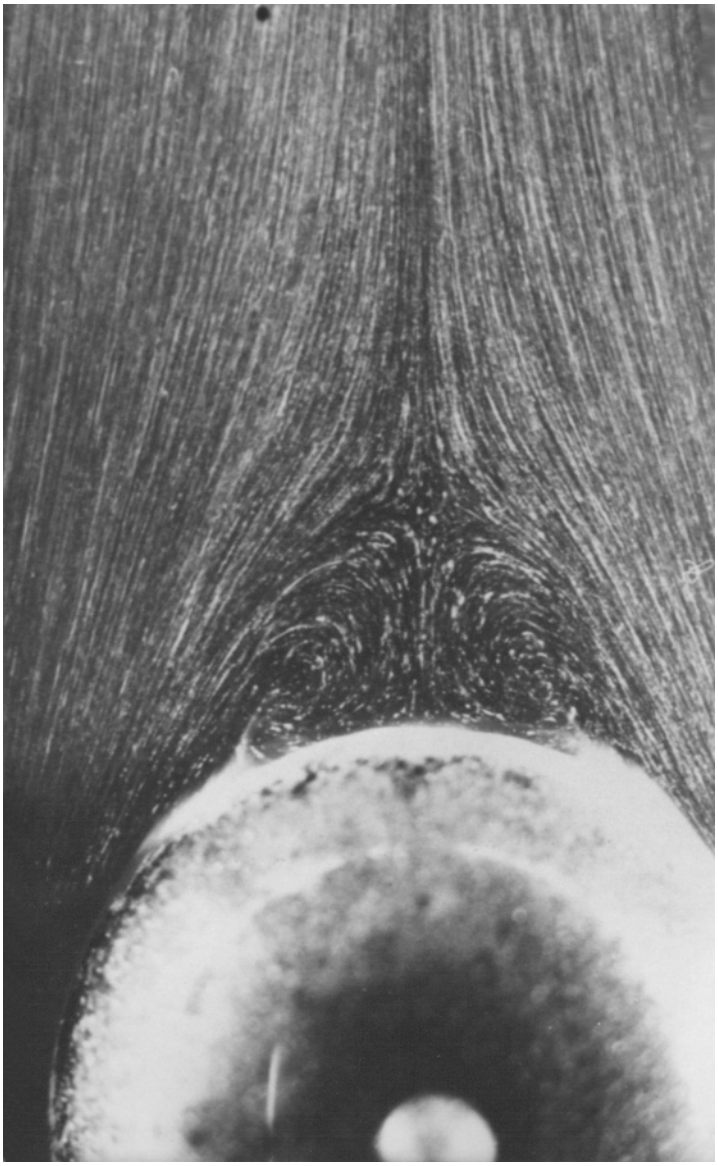

Image ID : SPHER-04
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Streamline pattern around a sphere (R=37.7)
Notes : Static watertank experiment.
Streamline pattern visualized by suspending aluminum powder.
Diameter of the sphere d =19.8. Steady flow.

Author : S. Taneda
Published in : 1956
Copyright : Physical Society of Japan
Reproduced from: S.Taneda: J. Phys. Soc. Jpn, Vol.11, No.10 (1956) 1104.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streamline
Shape features : Sphere, Separation, Spiral ring

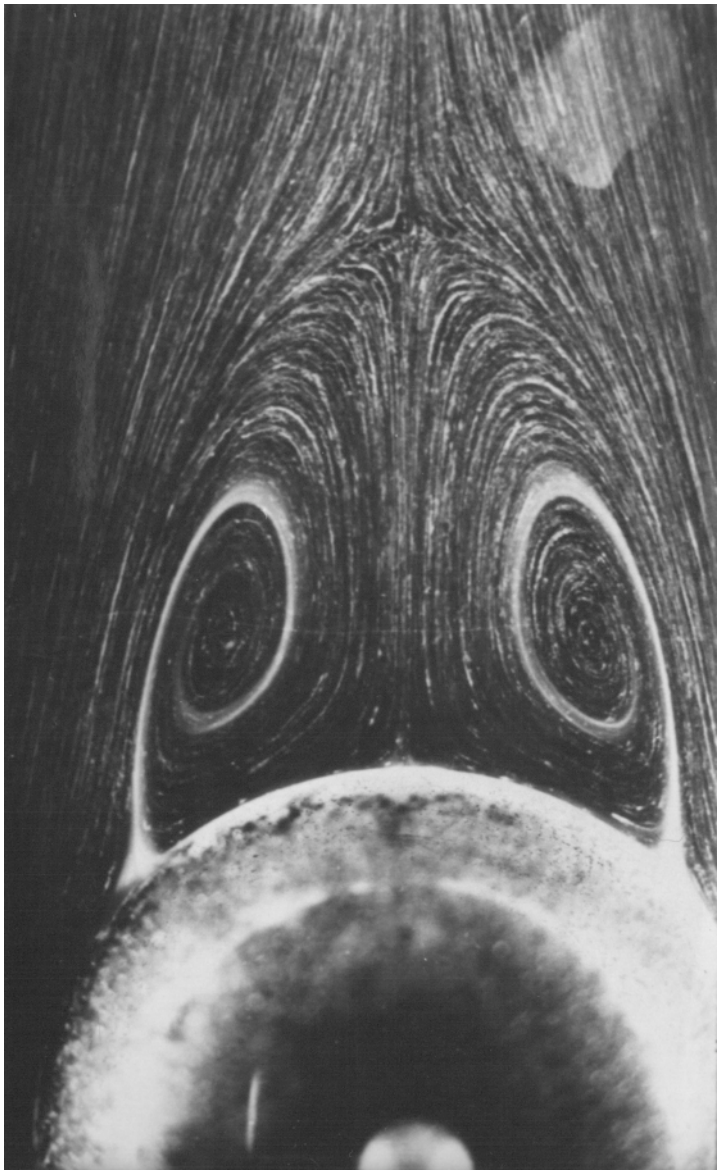

Image ID : SPHER-05
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Streamline pattern around a sphere (R=73.6)
Notes : Static watertank experiment.
Streamline pattern visualized by suspending aluminum powder.
The diameter of the sphere d =19.8. Steady flow.

Author : S. Taneda
Published in : 1956

Reproduced from: S.Taneda: J. Phys. Soc. Jpn, Vol.11, No.10 (1956) 1104.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streamline
Shape features : Sphere, Separation, Vortex ring

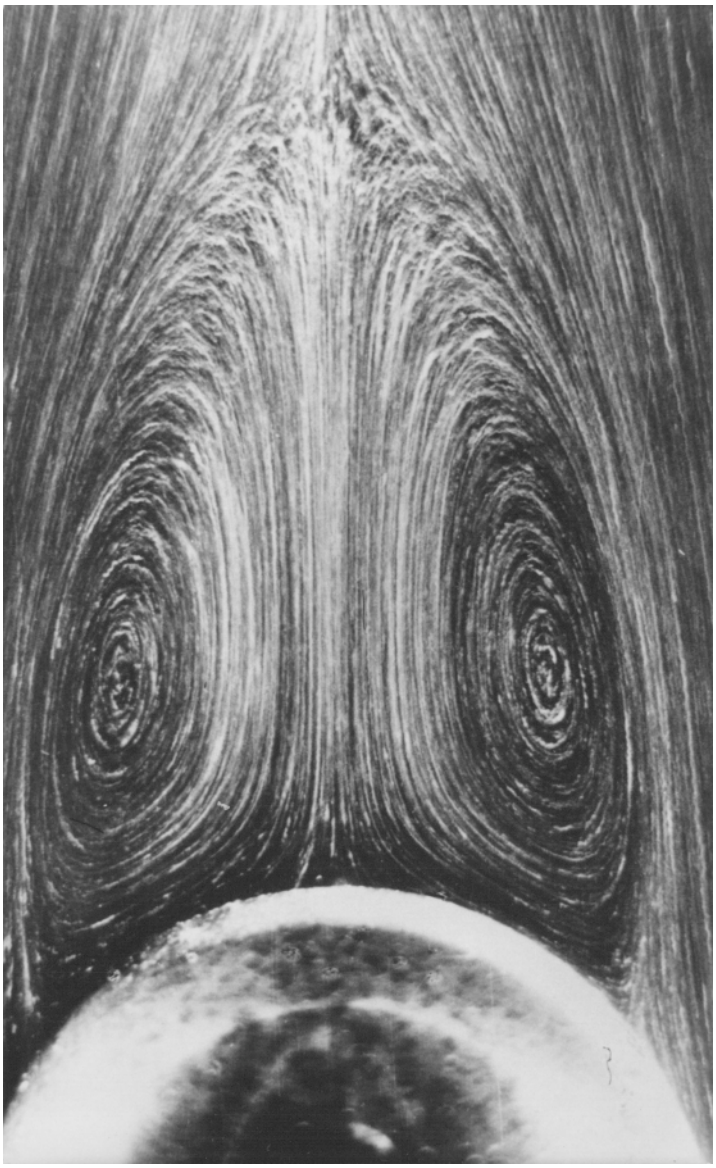

Image ID : SPHER-06
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Streamline pattern around a sphere (R=118)
Notes : Static watertank experiment.
Streamline pattern visualized by suspending aluminum powder.
Diameter of the sphere d =19.8. Steady flow.

Author : S. Taneda
Published in : 1956
Copyright : Physical Society of Japan
Reproduced from: S.Taneda: J. Phys. Soc. Jpn, Vol.11, No.10 (1956) 1104.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streamline
Shape features : Sphere, Separation, Vortex ring

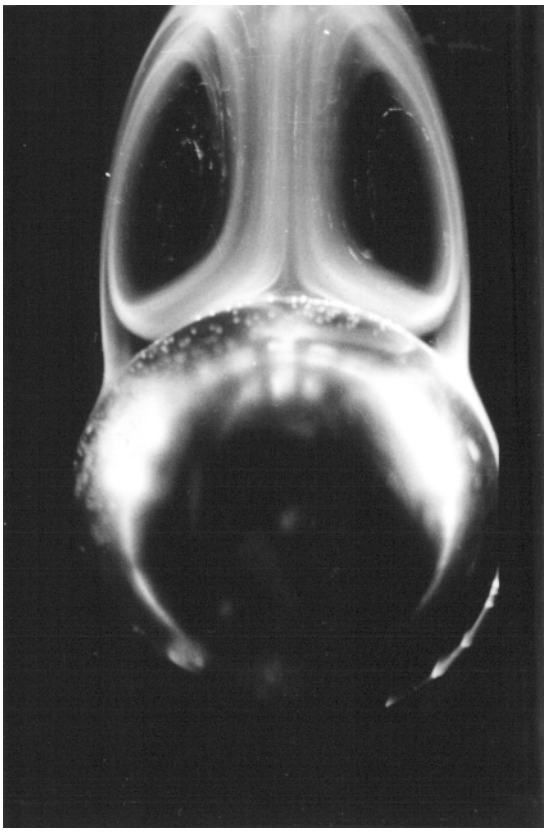

Image ID : SPHER-07
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Streak sheet around a sphere (R=104)
Notes : Static watertank experiment.
Streak sheet pattern is visualized by putting condensed milk.
Diameter of the sphere d =15.1. Steady flow.

Author : S. Taneda
Published in : 1956
Copyright : Physical Society of Japan
Reproduced from: S.Taneda: J. Phys. Soc. Jpn, Vol.11, No.10 (1956) 1104.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streak sheet
Shape features : Sphere, Separation, Vortex ring

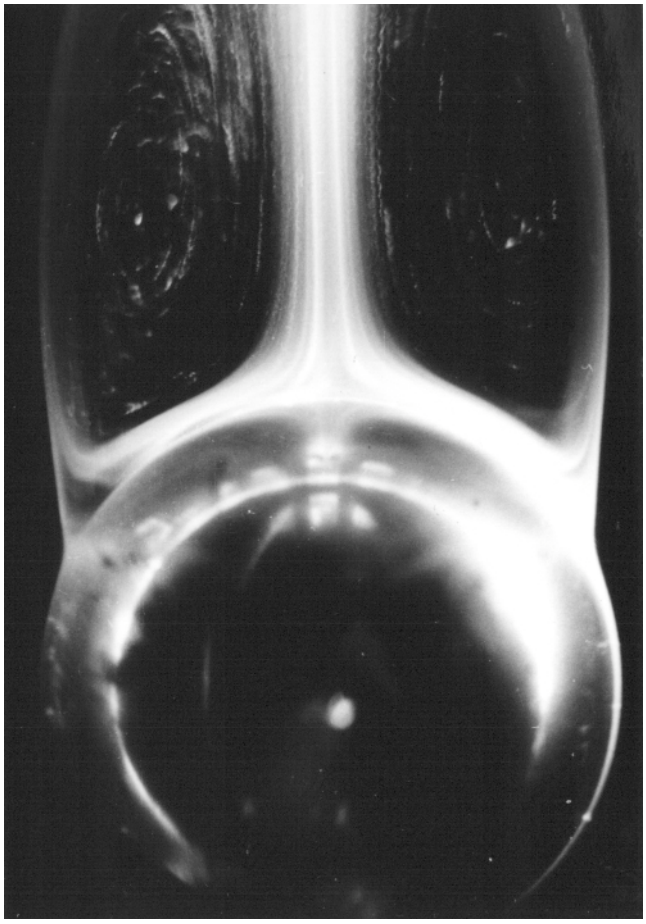

Image ID : SPHER-08
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Streak sheet around a sphere (R=202)
Notes : Static watertank experiment.
Streak sheet pattern is visualized by putting condensed milk.
Diameter of the sphere d =19.8. Steady flow.

Author : S. Taneda
Published in : 1956
Copyright : Physical Society of Japan
Reproduced from: S.Taneda: J. Phys. Soc. Jpn, Vol.11, No.10 (1956) 1104.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streak sheet
Shape features : Sphere, Separation, Vortex ring

Image ID : SPHER-09
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Wake of a oil drops falling freely in a static water
Notes : Static watertank experiment.
The oil drop of carbon tetrachloride colored by fluorescein.
Diameter of the drop d =5mm. Falling speed is 9.6cm/s. R = 550.

Author : S. Taneda
Published in : 1956
Copyright : North-Holland
Reproduced from: Theoretical and Applied Mechanics,
ed. F.I.Niordson & N.Olhoff (North-Holland,Amsterdam,1985)399.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streak sheet
Shape features : Sphere, Spiral, Periodicity

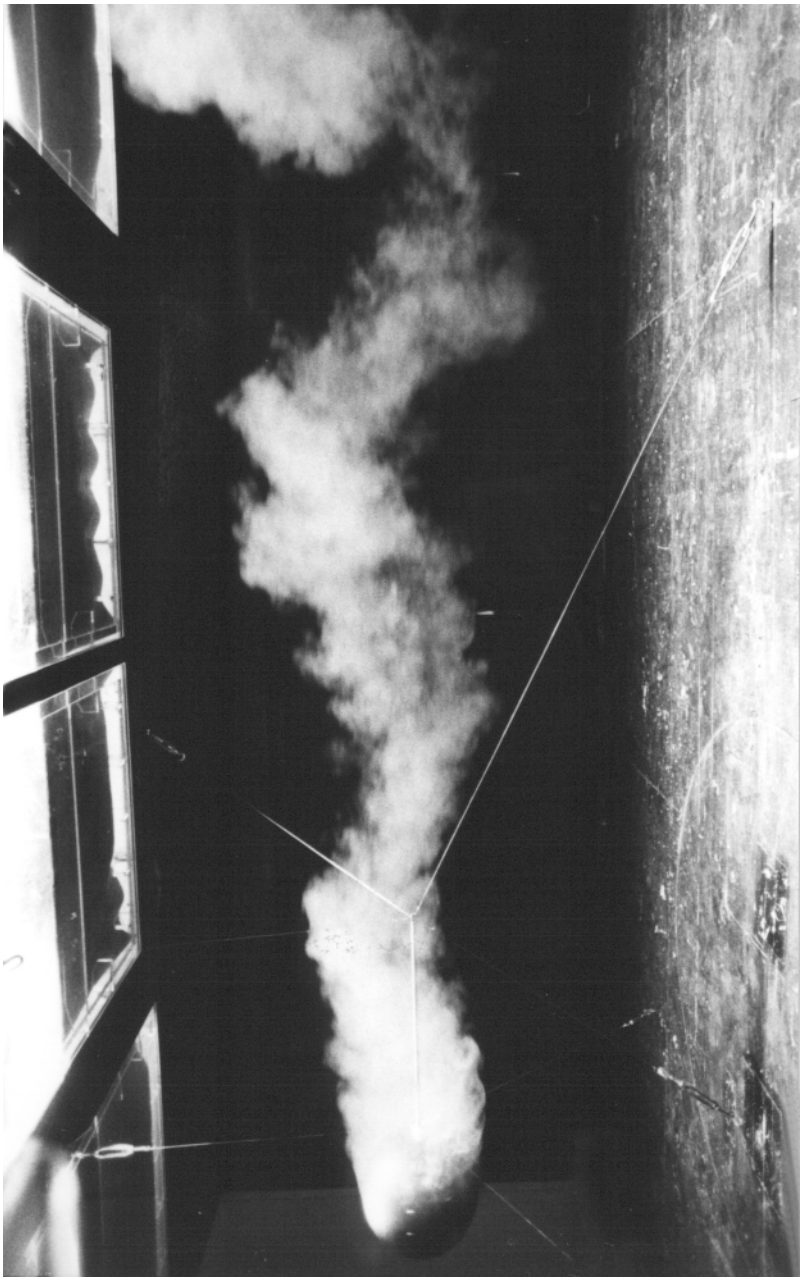

Image ID : SPHER-10
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Wake of a sphere (R=23000)
Notes : Wind-tunnnel experiment.
Visualized by smoke of titanium tetrachloride.
Diameter of the sphere is 33cm. Wind velocity is 1m/s.
The wake performs a wavy motion.

Author : S. Taneda
Published in : 1978

Reproduced from: S.Taneda: J. Fluid Mech., Vol.85, part1 (1978) 187.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streak sheet
Shape features : Sphere, Separation, Periodicity

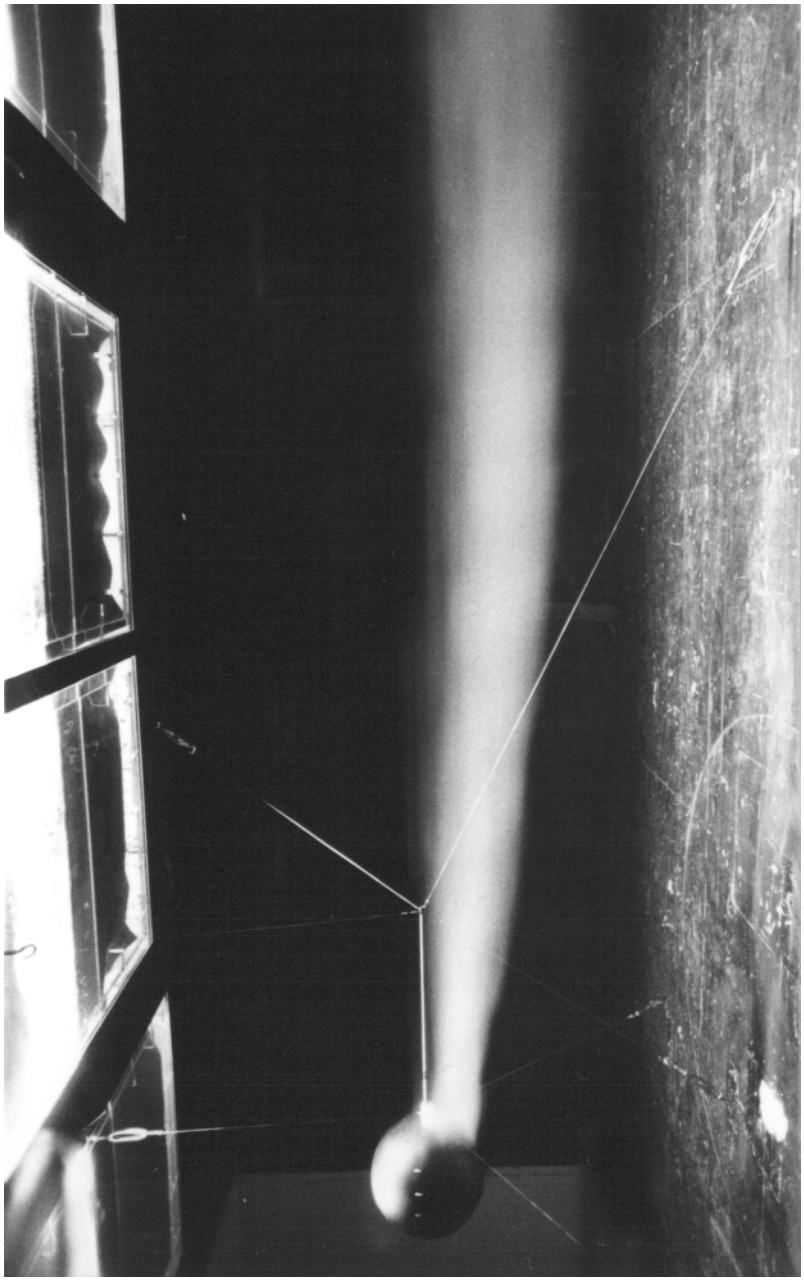

Image ID : SPHER-11
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Wake of a sphere (R=580000)
Notes : Wind-tunnnel experiment.
Visualized by smoke of titanium tetrachloride.
The diameter of the sphere is 33cm. Wind velocity is 25m/s.
The wake consists of two tongiludind vortices without vibration.

Author : S. Taneda
Published in : 1978
Copyright : Cambridge University Press
Reproduced from: S.Taneda: J. Fluid Mech., Vol.85, part1 (1978) 187.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streak sheet
Shape features : Sphere, Separation

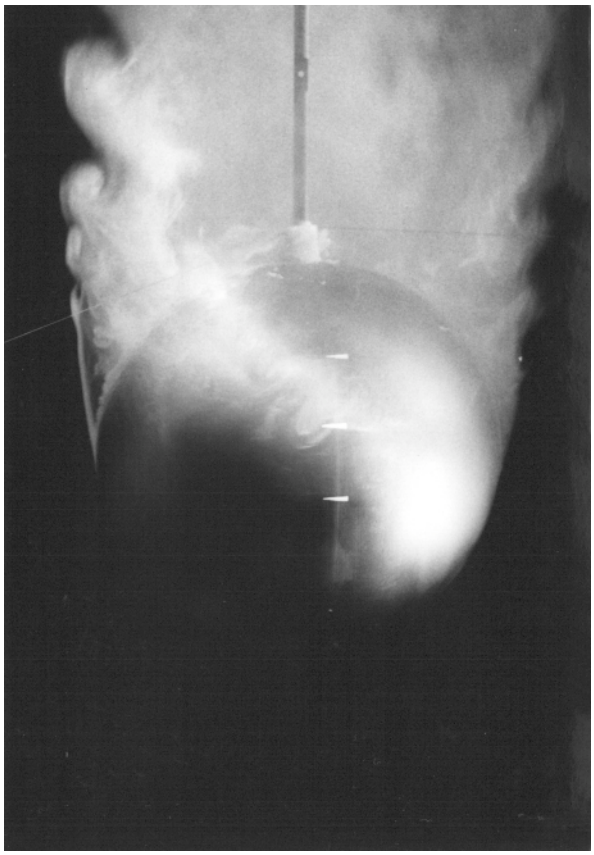

Image ID : SPHER-12
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Flow around a sphere (R=23000)
Notes : Wind-tunnnel experiment.
Visualized by smoke of titanium tetrachloride.
Diameter of the sphere is 33cm. Wind velocity is 1m/s.
The smoke injected from the rear end of the sphere.
The separation point is at 85°.

Author : S. Taneda
Published in : 1978
Copyright : Cambridge University Press
Reproduced from: S.Taneda: J. Fluid Mech., Vol.85, part1 (1978) 187.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streak sheet
Shape features : Sphere, Separation

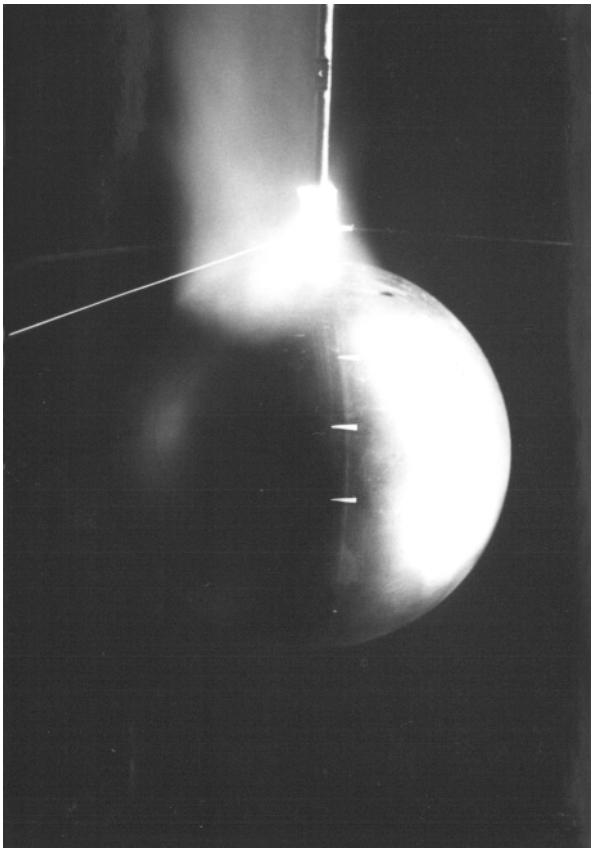

Image ID : SPHER-13
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Flow around a sphere (R=580000)
Notes : Wind-tunnnel experiment.
Visualized by smoke of titanium tetrachloride.
Diameter of the sphere is 33cm. Wind velocity is 1m/s.
The smoke injected from the rear end of the sphere.
The separation point is at about 140°.

Author : S. Taneda
Published in : 1978

Reproduced from: S.Taneda: J. Fluid Mech., Vol.85, part1 (1978) 187.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streak sheet
Shape features : Sphere, Separation

Image ID : SPHER-14
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Near downstream of a sphere moving horizontally in a stratified fluid
Notes : Density stratification in the salt water.
Streak sheet visualized by the electrolytic precipitation method.
The diameter of the sphere is 3cm. R = 266.
The wake performs wavy motion within horizontal.

Author : S. Taneda
Published in : 1988

Reproduced from: S. Taneda: Fluid Dynamics Learned from Images (Asakura-Shoten, 1988)

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Integrated streaksheet
Shape features : Sphere, Vortex street

Image ID : SPHER-15
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Far downstream of a sphere moving horizontally in a stratified fluid
Notes : Density stratification in the salt water.
Streak sheet visualized by the electrolytic precipitation method.
Diameter of the sphere is 3cm. R = 266.
The wake forms a vortex street similar to the Karman's vortex street within horizontal plane.

Author : S. Taneda
Published in : 1988

Reproduced from: S. Taneda: Fluid Dynamics Learned from Images (Asakura-Shoten, 1988)

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streak sheet

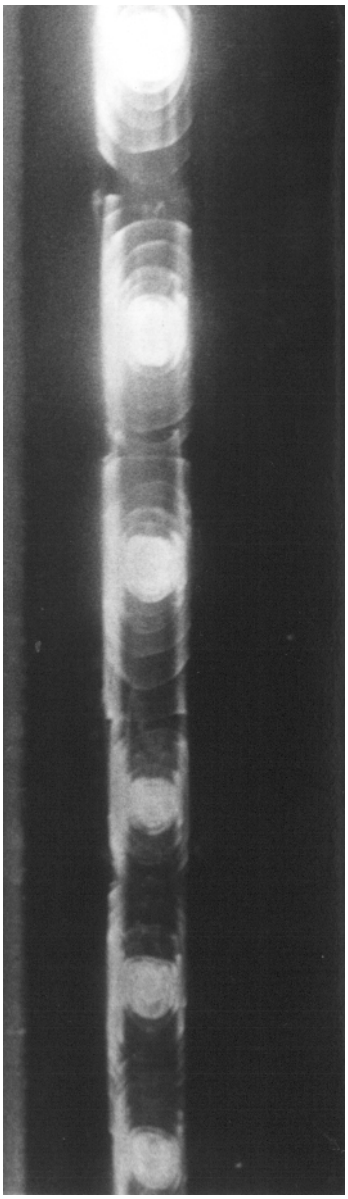

Image ID : SPHER-16
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Side view of the wake of a sphere moving horizontally in stratified fluid
Notes : Density stratification in the salt water.
Streak sheet visualized by the electrolytic precipitation method.
Diameter of the sphere is 3cm. R = 266.
The wake confined in a horizontal layer as thick as the diameter of the sphere.

Author : S. Taneda
Published in : 1988

Reproduced from: S. Taneda: Fluid Dynamics Learned from Images (Asakura-Shoten, 1988)

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streak sheet
Shape features : Sphere, Vortex street

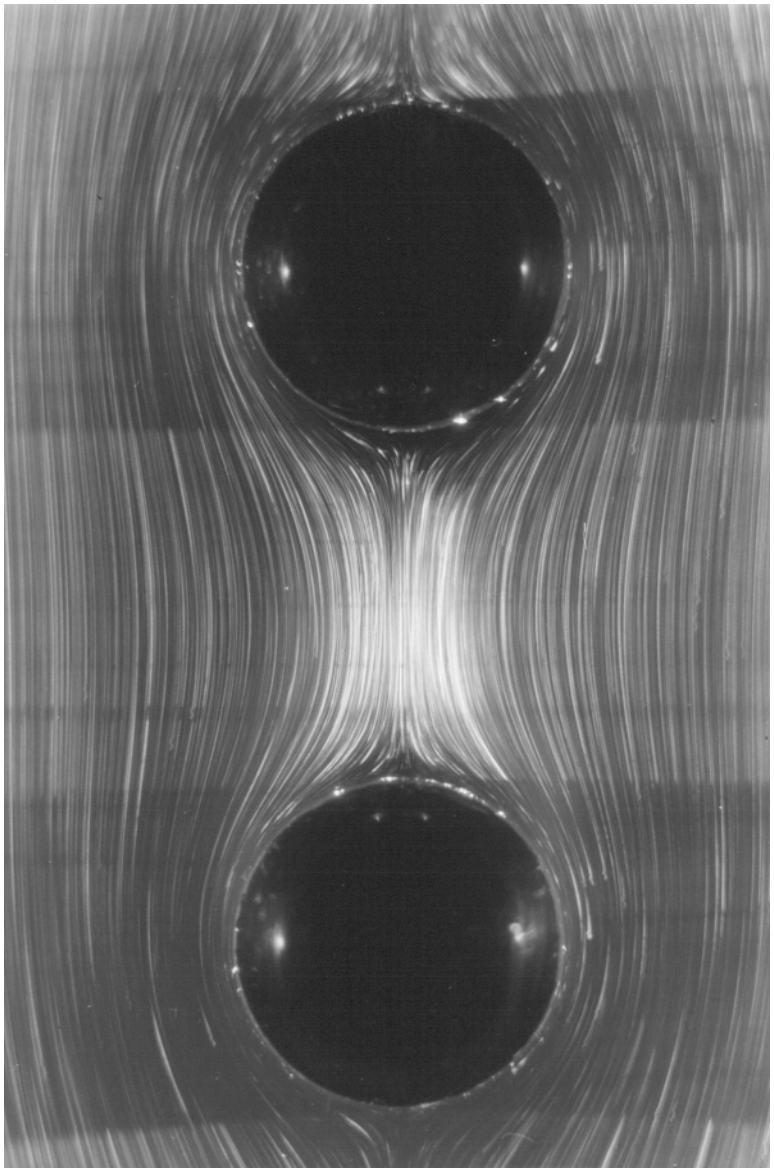

Image ID : SPHER-17
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Extremely low Reynolds number flow past two spheres arranged in the streamwise direction (ε =d)
Notes : Glycerine.
Streamline pattern visualized by suspending aluminum powder.
Diameter of the sphere d = 15.9mm.
Clearance between the two spheres ε = 15.9mm. R = 0.011.

Author : S. Taneda
Published in : 1979
Copyright : physical Society of Japan
Reproduced from: S.Taneda: J. Phys. Soc. Jpn, Vol.46, No.6 (1979) 1935.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streamline
Shape features : Cylinder, Fore-and-aft symmetry

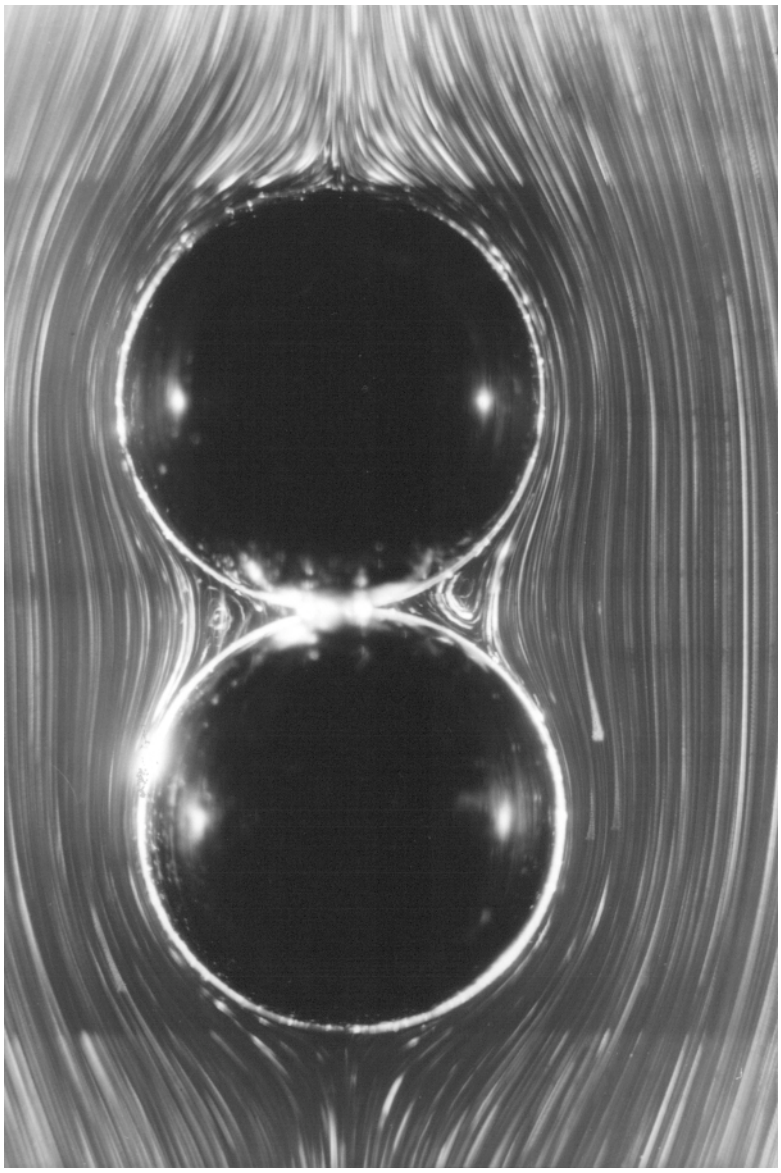

Image ID : SPHER-18
Data Base Name : FLOW-VIS
Input by : S. Taneda
Input on y/m/d : 1998. 11. 25
Image Title : Extremely low Reynolds number flow past two spheres arranged in the streamwise direction (ε =0)
Notes : Glycerine.
Streamline pattern visualized by suspending aluminum powder.
Diameter of the sphere d = 15.9mm.
Clearance between the two spheres $\varepsilon = 0$, R = 0.008.

Author : S. Taneda
Published in : 1979
Copyright : physical Society of Japan
Reproduced from: S.Taneda: J. Phys. Soc. Jpn, Vol.46, No.6 (1979) 1935.

Research Field : Fluid dynamics
Expressed as : Tracer photograph, Streamline
Shape features : Cylinder, Spiral, Fore-and-aft symmetry