

Episode 1: Dancing Droplets

Challenge Question: In the end of the video, Dr. Pettit put a nylon knitting needle near the syringe used to squirt water droplets onto the Teflon knitting needle. Why did Dr. Pettit need a nylon needle near the injected drops and why must the other needle be Teflon?

Challenge Answer: Teflon acquires electrons from other materials when rubbed, thus attaining a negative charge. Nylon gives up electrons to other materials when rubbed becoming positively charged. When the droplets come out of the syringe near the positively charged nylon needle they give up some electrons to it becoming positive themselves. This makes the water droplets more attracted to the negatively charged teflon needle because dissimilar charges attract.