



Multi-Axial Winding-H₂ Gas Cylinder

Introduction

To solve the problems of the traditional manufacture process of the type IV high pressure gas cylinder (uneven materials distribution, thermal deformation of plastic liner during filling, and local overweight), the developed prepreg yarn bundles (low hardening temp. and high softening temp.) adopts a gradual layer multi-angle fiber winding design to reduce weight accumulation of the yarn. Also the developed winding path software platform cooperate with a robotic arm to construct an automatic winding gas cylinder producing equipment.

Features

- Innovative dry CF towpreg
- Multi-axial winding system
- mass storage efficiency 7.5% (for H₂)
- Pw 350 bar
- Ph > 520 bar

Applications



airplane(AIRBUS)



Gas transport truck



FCV (TOYOTA)



H₂ refuel station



drone

Highlights

	Toyota (JP)	ITRI
capacity	60 L	48 L
Pw	700 bar	350 bar
H ₂ loading	2.3 kg	1.1 kg
Cylinder weight	41 kg	15 kg
Gravimetric capacity(wt%)	5.7%	7.5%

