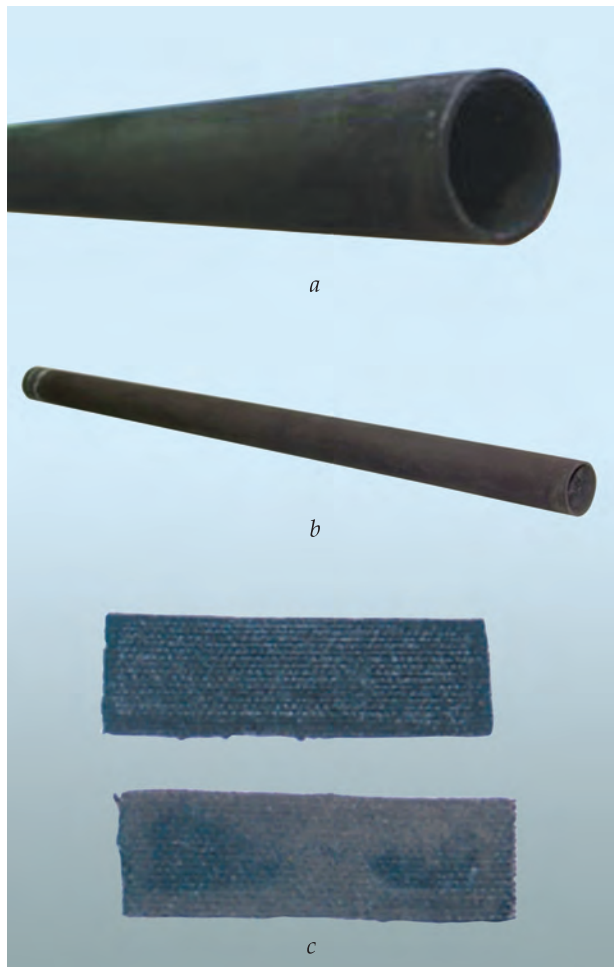


METHOD FOR MANUFACTURING HIGH-TEMPERATURE PROTON CONDUCTIVE MATERIALS



Proton conductive material deposited on ceramic hollow tube (a, b) and flexible pad (c)

Areas of Application

The proton conductive materials for high-temperature fuel cells and membrane catalytic contacts used in the synthetic fuel processes: synthesis gas conversion, olefins hydration, alcohols dehydration, and alkyl aromatics hydrocracking

Specification

The materials are products of acetylene dehydropolycondensation, carbamide homopolycondensation, and polyvinylchloride dehydrochlorination. They have the properties as shown in Table below

Parameter	Product		
	acetylene dehydro-polycondensation	carbamide homopoly-condensation	polyvinyl-chloride dehydrochlorination
Proton conductivity, S/cm, at 450–460 °C	10^{-4}	$4 \cdot 10^{-5}$	$5 \cdot 10^{-5}$
Thermo-stability, °C	600	550	500

Stage of Development. Suggestions for Commercialization

IRL3, TRL4
Trial batch of proton conductive materials for testing at customer workspace; ready for the elaboration of business plan

Advantages

The injected proton conductivity of developed materials ranges within 10^{-5} – 10^{-4} S/cm at a temperature of 200–460 °C

IPR Protection

IPR3

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