서남해안 풍력산업 허브 구축사업의 유망 상품의 특성

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The Characteristic of the Hub Construction Wind Power Industry
of the West-South Seashore with Favorable Products

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This paper has represented about the wind power industry of the west-south seashore with leading industry development for Honam Economic Region. These projects have composed of wind power industry of the west-south seashore, offshore wind turbine(2MW, 3MW) and onshore wind turbine(3kW, 5kW, 10kW), 11 projects, during 3 years- with honam leading industry development for economic region. The contents of these project are 3 favorable products and 3 business support projects. The favorable products are the MW offshore wind system with Outer-rotor type PMSG, the 3MWoffshore wind system with adaptation type of west-south sea, the hybrid generator system with wind turbine technology basis.

Key words : Certification(인증), West-South Seashores(서남해안), Low Speed Type(저풍속형), Out-Roter PMSG(외부형 회전자 영구자석형 동기 발전기), Blade(블레이드), Resin(수지)

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H−다리우스형 풍력터빈의 공력설계 방법의 구축

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Aerodynamic method of H-Darrieus wind turbines

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In this study, we have constructed the method of design about H-Darrieus wind turbine, a kind of VAWT(vertical axis wind turbine). The NACA 0012 airfoil is chosen for the blade, and DMS(double multiple streamtube) theory is used for the analysis. The flow field is computed with numerical solution of rotating Navier-Stokes equations. From the result of experimental data of power coefficient curves, the validity of the present research is checked. Through the non-dimensional parameter analysis for the wind turbine design, we estimated the efficiency of wind turbine with the resultant Cp's, with which an efficient design of VAWT is achieved, and aerodynamic characteristics are presented systematically.

Key words : H-Darrieus(H-다리우스), Vertical Axis Wind Turbine(수직형 풍력터빈), Double Multiple Streamtube Theory(이중다유관이론), Computational Fluid Dynamics(전산유체역학)

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