

## Daftar Notasi

P	Tekanan	atm
T	Suhu	°C
R	Konstante gas	Atm liter mol <sup>-1</sup> K <sup>-1</sup>
P <sup>o</sup>	Tekanan uap jenuh	atm
V	Volume Molar molekul	liter
D	Diameter kapiler	m
τ	Tegangan permukaan	N m <sup>-2</sup>
σ	Konduktivitas proton	S cm <sup>-1</sup>
R	Tahan dalam sel PEMFC	Ohm cm <sup>-2</sup>
S	Luas kontak membran	m <sup>2</sup>
l	Tebal membran	m
V	Voltase sel	V
E <sub>o</sub>	Voltase open circuit	V
b	Konstante Tafel	V
i	Densitas arus	A cm <sup>-2</sup>
γ	Konstante flooding	V
ω	Konstante fitting	cm <sup>2</sup> A <sup>-1</sup>

## Daftar pustaka

- Ajemian, K.T., Srinivasan, S., Benziger J. and Bocarsly, A.B., 2002., Investigation of PEMFC operation above 100 C employing perfluorosulfonic acid silicon oxide composite membranes, *Journal of Power Sources*, 109, 356.
- Alberti, G., Casciola, M., Capitán, D., Donnadio, A., Narducci, R., Pica M., and Sganappa, M., 2007, Novel Nafion-zirconium phosphate nanocomposite membranes with enhanced stability of proton conductivity at medium temperature and high relative humidity., *Electrochim Acta*, 52, 8125.
- Baschuk J.J. and Li, X., 2000., Modelling of polymer electrolyte membrane fuel cells with variable degree of water flooding, *Journal of Power Sources*, 86, 181.
- Bhure, M.H., Kumar, I., Natu, A.D., Chikate R.C. and Rode C.V., 2008., Silica with modified acid sites as a solid catalyst for selective cleavage of tert-butyl dimethylsilyl ethers, *Catal. Commun.* (impress).
- Bijay, D.N., 2007, SPEEK-zirconium hydrogen phosphate composite membranes with low methanol permeability prepared by electro-migration and in situ precipitation, *Journal of Colloid and interface science.*, 316, 612-621.
- Celistini, F., 1997., Capillary condensation within nanopores of various geometries., *Physics Letters. A* 228, 84.
- Haobold, H.G., Vad, T.H., Jungbluth H. and Hiller, P., 2001., Nano structure of Nafion a SAXS study, *Electrochim Acta.*, 46, 1559.
- Klein L.C, Daiko Y, Apparicio M, Damag F. 2005. Method for modifying proton exchange membrane using the sol-gel process. *Journal of polymer* 46: 4504-4509.
- Kreuer K.D. 1997. On the development on proton conducting materials for technological applications. *Journal of solid state ionic* 97: 1-15.
- Mahreni., A. Mohamad, A. B., Kadhum, A. A. H., Daud, W. R. W. and Iyuke, S. E., 2008. Nafion/silicon oxide/phosphotungstic acid nanocomposite membrane with enhanced proton conductivity, available online on 7 November in *Journal of Membrane science*.
- Ramani, V., Kunz, H.R. and Fenton, J.M., 2005., Effect of particle size reduction on the conductivity of Nafion/phosphotungstic acid composite membranes, *Journal of Membrane Sci.*, 266, 110.
- Staiti, P., Arico, A.S., Baglio, V., Lufrano, F., Passalacqua E. and Antonucci, V., 2001., Hybrid Nafion-silica membranes doped with heteropolyacids for application in direct methanol fuel cells., *Solid State Ionics*, 145, 101.