

# HALAMAN JUDUL

PROPOSAL TUGAS AKHIR – TF 181801

**JUDUL PROPOSAL TUGAS AKHIR JUDUL PROPOSAL**

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**JUDUL PROPOSAL TUGAS AKHIR**

**NAMA SAYA NAMA SAYA**

**NRP. 023XXXXXXXXXXX**

**Calon Dosen Pembimbing**

**Nama dan Gelar Calon Dosen Pembimbing 1**

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**Fakultas Teknologi Industri dan Rekayasa Sistem**

**Institut Teknologi Sepuluh Nopember**

**2020**

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# LEMBAR PENGESAHAN

**PROPOSAL TUGAS AKHIR**

**PROGRAM STUDI SARJANA DEPARTEMEN TEKNIK FISIK**A

|  |  |  |  |
| --- | --- | --- | --- |
| Judul | : | Judul Proposal Tugas Akhir Judul Proposal Tugas Akhir Judul Proposal Tugas Akhir | |
| Bidang Minat | : | Rekayasa Enegi dan Pengkondisian Lingkungan | |
| Mata Kuliah Pilihan yang diambil | : | Rekayasa Hidrodinamika  Mesin-mesin Fluida  Ekonomi Energi | |
| Identitas Pengusul |  |  | |
| Nama | : | Nama Saya | |
| NRP | : | 023xxxxxxxxxxx | |
| Jenis Kelamin | : | Perempuan | |
| Jangka Waktu Pelaksanaan | : | 4 Bulan | |
| Calon Pembimbing | : | Calon Pembimbing 1  Calon Pembimbing 2 | |
| Status Pengusulan | : | Baru / Lama | |
| Surabaya, xx Bulan xxxx  Pengusul Proposal,  Nama Saya  NRP. 023xxxxxxxxxxx | | | | |
| Menyetahui,  Kepala Laboratorium  Rekayasa Energi & Pengkondisian Lingkungan  Nama dan Gelar  NIP. | | | Calon Dosen Pembimbing  Nama dan Gelar.,  NIP. | |

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# PENDAHULUAN

## Latar Belakang

Profil kecepatan aliran di perairan Indonesia menunjukkan nilai yang beragam tetapi cenderung rendah. Hal ini dapat dibuktikan dari studi fisibilitas arus air laut pada Selat Alas (Aziz, 2009) dan Selat Larantuka (Orhan, dkk, 2015) yang menunjukkan kecepatan 2 m/s – 4 m/s. Sedangkan kecepatan aliran air laut pada pulau-pulau kecil seperti pulau Berhala, Anambas, dan Biawak menunjukkan rata-rata kecepatan aliran air pada 0.135 m/s, 0.055 m/s, dan 0.272 m/s.

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## Rumusan Masalah

Berdasarkan latar belakang diatas, maka rumusan masalah pada penelitian ini adalah:

1. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua gmcgm hfgd jcfjc
2. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua gmcgm hfgd jcfjc

## Tujuan Tugas Akhir

Tujuan dilakukannya penelitian ini adalah:

1. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua gmcgm hfgd jcfjc
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## Batasan Masalah

Batasan masalah pada penelitian ini adalah:

1. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua
2. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua
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4. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua

## Relevansi Tugas Akhir

Penelitian yang diusulkan ini diharapkan memberi manfaat sebagai berikut:

1. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua
2. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua

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# TINJUAN PUSTAKA

## Review Penelitian Sebelumnya

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## Teori Penunjang

### Teori 1

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***Gambar 2.1*** *(a) VAHT 3 Blades, (b) VAHT-SBC 6 Blades, (c) VAHT-SBC 9 Blades* (Hantoro, et al., 2018)

Semakin tinggi nilai koefisien performansi (Cp) maka semakin besar daya yang dapat diekstraksi oleh turbin. Pada penelitian eksperimental ini, nilai Cp terbesar dihasilkan pada VAHT-SBC dengan 9 blade, dengan nilai Cp 0.42 pada TSR 2.19. Inovasi berupa SBC juga dapat meningkatkan gaya angkat dan momen inersia yang berdampak pada peningkatan nilai Cp dan torsi. Selain itu SBC juga berguna untuk meningkatkan nilai ekstraksi daya turbin, tanpa membuat dimensi turbin bertambah besar (Hantoro, et al., 2018). Desain turbin VAHT SBC ditunjukkan pada Gambar 2.1.

### Teori 2

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**Gambar 2.2**Lorem ipsum dolor sit amet, consetetur sadipscing elitr

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### Teori 3

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### Teori 4

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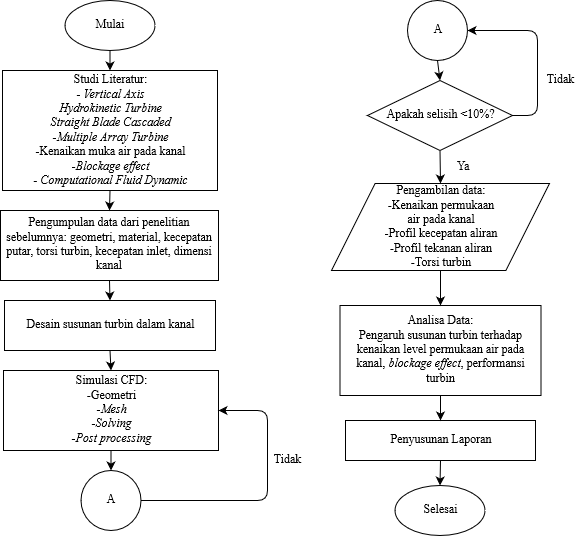
### Teori 5

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|  |  |
| --- | --- |
|  | (2) |

# METODE PENELITIAN

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**Gambar 3.1** Diagram Alir Metode Penelitian

## Studi Literatur

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## Pengumpulan Data

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## Desain Susunan Turbin pada Kanal

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**Tabel 3.1** Dimensi Turbin VAHT-SBC

|  |  |
| --- | --- |
| **Parameter** | **Ukuran (cm)** |
| Panjang shaft | 160 |
| Diameter shaft | 5,818 |
| Diameter turbin | 116,364 |
| Tinggi turbin | 116,364 |
| Panjang chord blade (tipe NACA0018) | 14,545 |
| Panjang span blade (tipe NACA 0018) | 116,364 |

## Simulasi CFD

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## Validasi Simulasi

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## Pengambilan Data

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## Analisa Data dan Penarikan Kesimpulan

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# JADWAL KEGIATAN

Tugas akhir ini direncanakan untuk diselesaikan selama 4 bulan dengan jadwal kegiatan seperti ditunjukkan pada Tabel 4.1.

**Tabel 4.1** Jadwal Kegiatan



*Halaman ini sengaja dikosongkan*

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